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Dubious record Venture capital investment in network start-ups declines for a record eighth straight quarter this spring. PAGE 10.



Line of sight 3Com CEO Bruce Claflin sees light at the end of the current dark economic tunnel. PAGE 17.

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August 12, 2002 ■ Volume 19, Number 32



New applications based on Session Initiation Protocol could spur voice-over-IP migration. Page 41.

The Sept. 11 attacks forced a Manhattan college to speed up its VoIP implementation. Page 45.

SECTOR SPOTLIGHT: EDUCATION

Schools across the country are learning the ABCs of VoIP. Page 46.

RANDY LYHUS

Sun aims to alter Linux landscape

■ BY PHIL HOCHMUTH AND DENI CONNOR

SAN FRANCISCO — While a slew of vendors will make product splashes this week at LinuxWorld Expo, Sun's jump into the enterprise Linux server market is expected to make the biggest waves.

Sun will unveil two general-purpose, Intel-based servers running its own version of Linux, setting the company apart from rivals such as Hewlett-Packard and IBM that rely more heavily on technology from Linux partners. Sun will differentiate the servers, officially called the Cobalt LX50s (but previously known as Big Bear), by bundling in a bevy of software, including an application server, clustering technology, a directory, management tools and Java 2 Standard Edition.

"Sun can potentially do Linux better than any other [server] vendor," says Bill Claybrook, an analyst with Aberdeen Group. "Sun has done a better job at scaling Unix than anyone. I'd be surprised if they didn't do that with Linux. Combined with Solaris, Sun could have a good story here."

See Linux, page 14

Deadline nears for execs to sign oath

■ BY JENNIFER MEARS AND TIM GREENE

Call it D-day for corporate America.

Aug. 14 is the deadline for most CEOs and CFOs of 947 publicly traded U.S. companies — many of which are tech giants — that have revenues of at least $1.2 billion to sign a Securities and Exchange Commission (SEC) document personally attesting that their companies' most recent financial filings are accurate and complete.

Depending on how the companies align their fiscal years, some executives have until Dec. 27 to file the forms, but failure to sign the documents can result in fines or jail terms for the executives. As of Friday, 114 CEOs had filed.

The list of those who must sign these documents reads like a who's who of computing and communications: Microsoft's Steve Ballmer, Intel's Craig Barrett,

See D-day, page 12

NEWSPAPER ■ $5.00

WEBLOGS IN THE WORKPLACE

Blogs finding fans in business world

■ BY JOHN COX



"I'd been looking for a vehicle to communicate my ideas about enterprise IT to my staff and to others."

Phillip Windley,
CIO, state of Utah

Are Weblogs a legitimate business tool, or merely the Internet's latest vehicle for personal indulgence?

Phillip Windley, CIO for the state of Utah, is among those trying to find out. In June he launched a program that encourages 2,000 IT staffers and about 18,000 other state employees to use Weblogging software for what might be called strategic noodling.

For the first 100 state employees who take him up on his offer, the state IT group will pay $40 for a Weblogging product from UserLand called Radio UserLand. So far, the only rule governing what participants write about is a general guideline from Windley that Weblog contributors think carefully about what they want to post on their URLs, which are accessible to anyone for the time being.

"I have hopes [for this project], but I wouldn't say I have great expectations," Windley says. "If everybody just wrote every day [about things such as] 'Here's an interesting problem I had today,' and then we hook up a Google [Web search] appliance, we can create a

See Blogs, page 16



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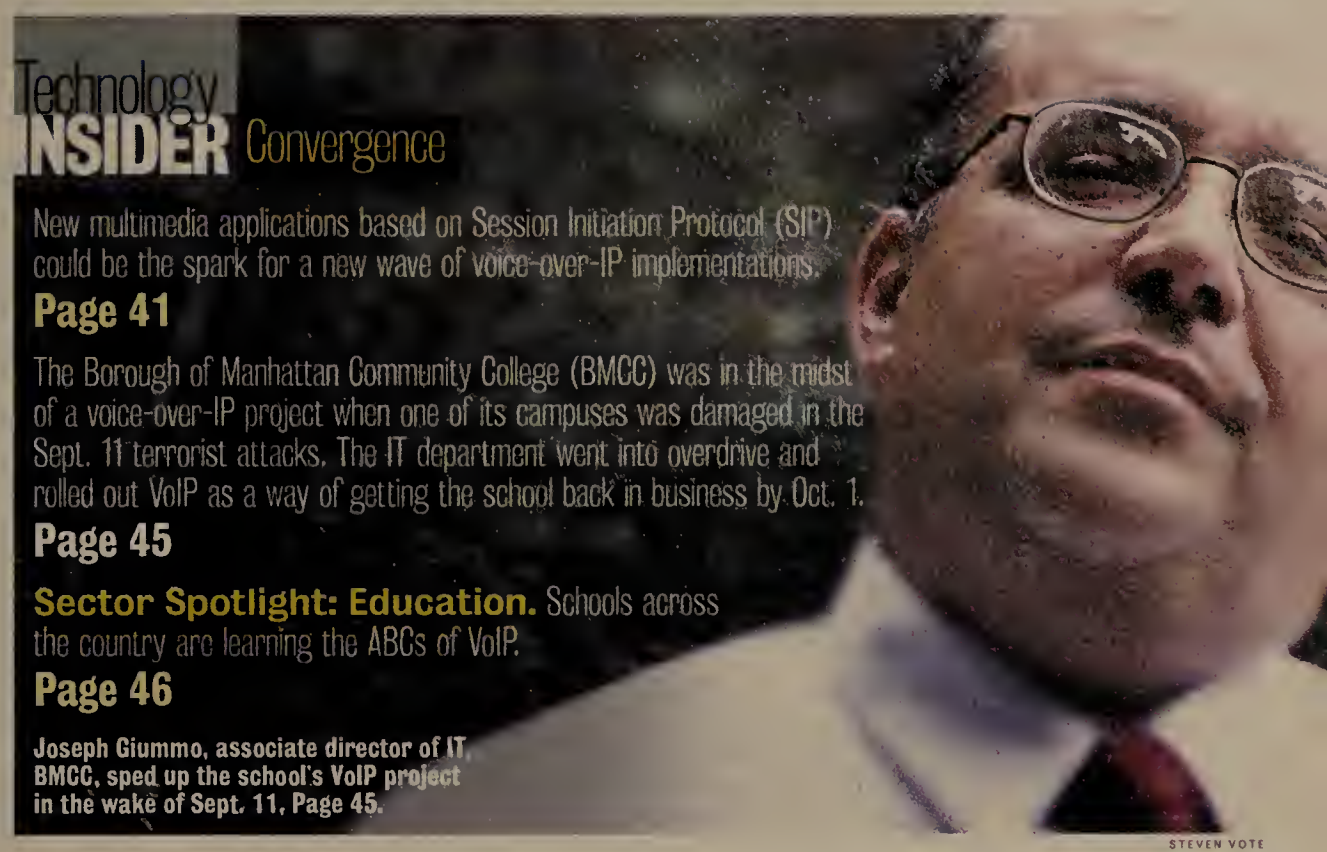
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MARK WILSON

Marc Berube, IS training manager at Travelers in Hartford, Conn., was one who took advantage of the skills assessment program. See page 48.



Technology INSIDER Convergence

New multimedia applications based on Session Initiation Protocol (SIP) could be the spark for a new wave of voice-over-IP implementations.

Page 41

The Borough of Manhattan Community College (BMCC) was in the midst of a voice-over-IP project when one of its campuses was damaged in the Sept. 11 terrorist attacks. The IT department went into overdrive and rolled out VoIP as a way of getting the school back in business by Oct. 1.

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Sector Spotlight: Education. Schools across the country are learning the ABCs of VoIP.

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Joseph Giummo, associate director of IT, BMCC, sped up the school's VoIP project in the wake of Sept. 11, Page 45.

STEVEN VOTE

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Interactive

Audio Q&A

If you enjoy our interview with 3Com CEO Bruce Claflin on page 17, head online to hear more.

DocFinder: 1745

VoIP: Getting ready

In this online-exclusive story to our Technology Insider on convergence, learn how to start figuring out what your network needs to be able to support IP telephony.

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Call for entries: User Excellence Award

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VoIP training comes to you!

Looking for a cost-effective way to train your team? Trying to widen your department's skill set on a shrinking budget? With equipment provided by Avaya, NetSmart's on-site VoIP training is the perfect way to educate your staff without leaving the office.

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Compendium

Microsoft's newest threat: Google

Fusion Executive Editor Adam Gaffin alerts you to a speech by Microsoft Vice President Yusuf Mehdi, who thinks the search engine could pose a problem to MSN.

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Help Desk

Token ring and Ethernet

Columnist Ron Nutter helps a user who's trying to connect five people with Ethernet cards to a token-ring network.

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Telework Beat

Bridging the IT-telework gap

Net.Worker Managing Editor Toni Kistner explores the often dysfunctional relationship between teleworkers and IT.

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View from The Edge

Unbridled optimism

The Edge Managing Editor Jim Duffy looks at beleaguered Lucent, whose officials are upbeat — almost ebullient — about their prospects for fiscal 2003.

DocFinder: 1749

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News Bits

WorldCom finds more faulty accounting

■ The news only gets worse at WorldCom. Late last week the company disclosed that it had discovered an additional $3.3 billion in accounting errors and would be forced to restate earnings for 2000. WorldCom, which filed for bankruptcy protection in July, had already announced $3.85 billion in improperly booked expenses involving results for 2001 and 2002. Those accounting errors have led to federal criminal charges against WorldCom's former CFO and former corporate controller. The Securities and Exchange Commission has been made aware of the errors reported Thursday, WorldCom said. The internal investigation into its accounting activities is still under way at WorldCom, and officials warned that the investigation could uncover more errors before it is over. (See related stories, pages 27 and 28.)

Interliant files for bankruptcy, CEO resigns

■ Managed infrastructure provider Interliant has filed for Chapter 11 bankruptcy protection, and CEO Bruce Graham has resigned. The company says the Chapter 11 filing made last week will let it continue operating while it reorganizes its balance sheet. The bankruptcy filing covers the company's U.S. subsidiaries; its holdings in the U.K. are unaffected. The filing comes shortly after Interliant announced it did not have enough cash to fund operations beyond the end of the second quarter. Interliant says it now has access to cash collateral through its primary lender while it finalizes debtor-in-possession financing. Meanwhile, Francis Alfano, Interliant's CFO, has taken over as president and CEO. Graham will remain as a member of Interliant's board of directors.

FTC slaps Microsoft over Passport

■ The Federal Trade Commission last week said it has reached a settlement with Microsoft over misrepresentations of the privacy and security of the company's Passport Internet sign-on service, Passport Wallet and Kids Passport. After a year-long investigation, the agency concluded that the Passport services did not provide the security required to store sensitive user information, and collected more personal user information than stated in the company's privacy policy. The FTC has ordered Microsoft to cease misrepresenting the information collected by the services, implement and maintain an information security program, and have its security program certified by an independent specialist every two years.

COMPENDIUM

The Ethernet-enabled teddy bear

Teddy Borg is a teddy bear with an embedded five-port 10/100M Ethernet switch (the switch LEDs are in the eyes; the Ethernet cables enter and exit the bear's paws). "Dear Lord, why?" you ask? Three MIT students say they did it because "We like computers, networking hardware especially."

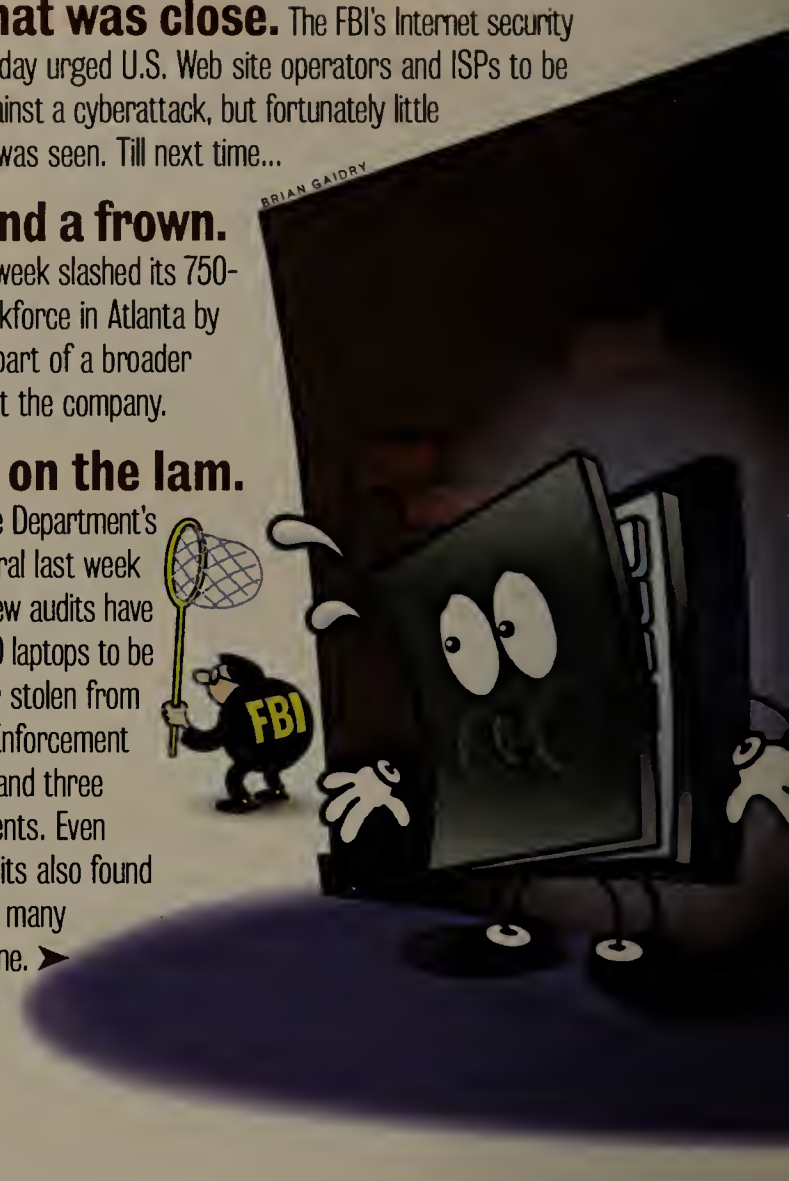
Read more and get the gory pictures at: www.nwfusion.com, DocFinder: 1734.

■ TheGoodTheBadTheUgly

Whew, that was close. The FBI's Internet security group last Monday urged U.S. Web site operators and ISPs to be on the alert against a cyberattack, but fortunately little attack activity was seen. Till next time...

A Coke and a frown. Coca-Cola last week slashed its 750-member IT workforce in Atlanta by 140 people as part of a broader restructuring at the company.

Laptops on the lam. The U.S. Justice Department's Inspector General last week revealed that new audits have found some 400 laptops to be lost, missing or stolen from the FBI, Drug Enforcement Administration and three other departments. Even worse: The audits also found nearly twice as many weapons are gone. ➤



AOL Internet division gets new leader

■ In a widely anticipated move, AOL Time Warner last week named Jonathan Miller as the new chairman and CEO of its tottering AOL Internet division. Miller will be responsible for all of AOL's businesses and will report to Don Logan, head of the company's new Media and Communications Group. Miller was CEO of USA Information and Services until his resignation in June. The new CEO is expected to face a mountain of challenges as he takes over a division that has been passed around lately like a hot potato. Not only has AOL's growth been stymied by a prolonged downturn in the Internet advertising market, the unit has recently come under scrutiny for alleged financial misdoings.

OnFiber snaps up Telseon

■ OnFiber Networks, a metropolitan optical services provider, purchased metropolitan Ethernet pioneer Telseon last week. The purchase boosts OnFiber's presence from 10 markets to 12 and increases the company's signed contract base by 40% to $39 million. The new customers include Cable & Wireless, Williams Communications, Internap and eBay. Telseon, along with Yipes Communications and Williams, was one of the first companies to sell metropolitan Ethernet services. Unlike Yipes and Cogent, Telseon did not target multitenant buildings. Instead the company sold services from carrier hotels and other Internet points of presence where some of its equipment was located.

Computing pioneer Edsger Dijkstra dies

■ Edsger Dijkstra, a computer scientist responsible for a variety of concepts used today in networks, died last week at his home in the Netherlands. Dijkstra was best known for his algorithm that found the shortest path between two points. Shortest-path algorithms are used today in network routing and anything that needs to determine the fastest route between two points, such as flight planning.

Dijkstra also is known for simplifying computer science with a concept known as structured programming, in which sections of code have clearly defined entrance and exit points that isolate them frm other areas of code and if changed will have no effect on them. A colorful speaker, Dijkstra is credited with a number of technologies and phrases, including deadly embrace and semaphores, which synchronize computer resources.

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Sprint touts nationwide 3G wireless

■ BY MICHAEL MARTIN

Sprint's nationwide launch of next-generation wireless data services last week might give the company a leg up on competitors, but it's not clear whether big businesses are ready to ramp up their wireless spending.

"It may be some time before we see a lot of business user adoption," says Keith Waryas, an analyst with IDC. "Over the next six to eight months there should be some gradual growth."

Gian Zoppo, CIO for marketing company Porter Novelli's U.S. region, says wireless has a lot of potential, especially when it comes to giving mobile workers access to internal systems. But, he says, he's not looking at implementing wireless data in a big way anytime soon because wireless coverage in the U.S. is still spotty.

"When you get to a destination, you're never sure whether it's going to work or not," he says.

Another problem is that U.S. carriers, unlike their European counterparts, haven't adopted a universal standard, Zoppo says, so roaming from one carrier's coverage area to another often won't be an option in the U.S.

Sprint isn't the first wireless carrier to introduce next-generation wireless services, but it is the first to claim national coverage. Sprint is billing the new network, based on Code Division Multiple Access technology, as a 3G service.

However, the current network, like other wireless carriers' next-generation networks, is only a step on the path to true 3G. True 3G will support speeds up to 2M bit/sec, while Sprint's new network, and the upgraded networks of its rivals, support average speeds of 40K to 70K bit/sec, bursting up to 144K bit/sec.

For business users, the main application will be productivity software such as Outlook and Lotus Notes. Sprint will offer the applications, through a platform provided by technology partner Seven, over a variety of handsets and through wireless PC cards for laptops.

Sprint expects the Handspring Treo will stack up well against Research in Motion's popular BlackBerry. The Handspring Treo lets users get e-mail, surf the Web and handle voice calls.

"It's in a position where it can compete with Research in Motion," IDC's Waryas says. "The devices are cheaper, the throughput is higher, and the functionality is better."

Sprint offers three Business Connection programs for users:

- Business Connection Personal Edition gives e-mail access to one person at a time.
- Business Connection Enterprise Edition, which has a $250 setup cost and a $10 per-user monthly fee, lets companies connect multiple users. Sprint hosts the service.
- The final option lets customers host their own e-mail and productivity application from behind a corporate firewall. Sprint has signed a number of partners to help companies with their own implementations.

Sprint has a six- to eight-month window of opportunity to snap up customers before its main competitors — Verizon Wireless, AT&T Wireless, Cingular and VoiceStream — get broader coverage, says Mark Lowenstein, managing director of wireless research firm Mobile Ecosystem.

Having ubiquitous coverage is key to attracting business users, IDC's Waryas says.

"Business customers want a mobile business tool, and they want it to be in all major centers," he says.

There will be coverage holes in any wireless network, Waryas says, but Sprint has more area covered than any other provider.

Pricing for data services on Sprint's network will be based on the amount of data downloaded. An introductory plan gives users 2,000 voice minutes and 2M bytes of data for about $90. Laptop users can get 20M bytes of data per month for about $50. ■

Moving toward 3G

All of the major wireless providers are moving toward next-generation wireless services. Here's their progress:

Provider	Technology	Coverage
Sprint	Code Division Multiple Access (CDMA)	National
Verizon	CDMA	300 cities
AT&T	GSM communications/Global Packet Radio Service (GPRS)	20 states
Cingular	GSM/GPRS	7 states
VoiceStream	GSM/GPRS	45 cities

SLAMming service levels into shape

■ BY DENISE DUBIE

Micromuse next month will debut software it says can help companies improve their application performance by identifying all the components of a business process and managing them as a logical unit.

Micromuse will use NetWorld+Interop in Atlanta to introduce Netcool/SLA Manager (SLAM) which is an add-on to the company's flagship Netcool/Omnibus fault management package.

The company says SLAM filters performance data collected by Netcool and can spot events, such as a Web or application server slowdown, that could affect the performance of an employee- or customer-facing business service. SLAM helps users model business services, or create a topology of the network elements an application uses, to determine when performance degradations or device failures will affect end users.

"Micromuse is looking to address the higher needs of a company by managing a service across network and system elements," says Glenn O'Donnell, a program director with Meta Group. He says the product will compete with Managed Objects' Formula and Business Service Analyzer software, IBM Tivoli's Service Level Advisor and Smarts' InCharge Application Services Manager.

Managed Objects has been ahead in the market, but competitors are inching closer as makers of fault, performance and other management tools add process management technology to their packages.

SLAM is installed on an HP-UX, Solaris or Windows server adjacent to a dedicated Netcool/Omnibus server. SLAM receives data from Netcool/Omnibus and uses agents on a network to collect data. The software looks at the events and matches the data against predefined service models to determine performance abnormalities. Network managers view service status via the SLAM graphical user interface with a Web browser (see graphic).

SLAM costs between $200,000 and $250,000 for an entry-level implementation. The software will be generally available in September.

In other management technology news, NetScout this week will introduce an appliance designed to give network managers more visibility into the performance of LANs using Cisco's Gigabit Etherchannel technology, which enables Gigabit Ethernet links to be bundled to support bandwidth-intensive applications. The nGenius Gigabit Ethernet Aggregation 9900 Probe passively monitors traffic to collect data on application bandwidth usage, then sends the data to NetScout's nGenius Performance Manager for analysis.

Without such a tool, says IDC Senior Analyst Paul Bugala, network managers would have to manually gather and correlate the packets and usage data from the disparate streams of traffic.

The product costs $83,000.

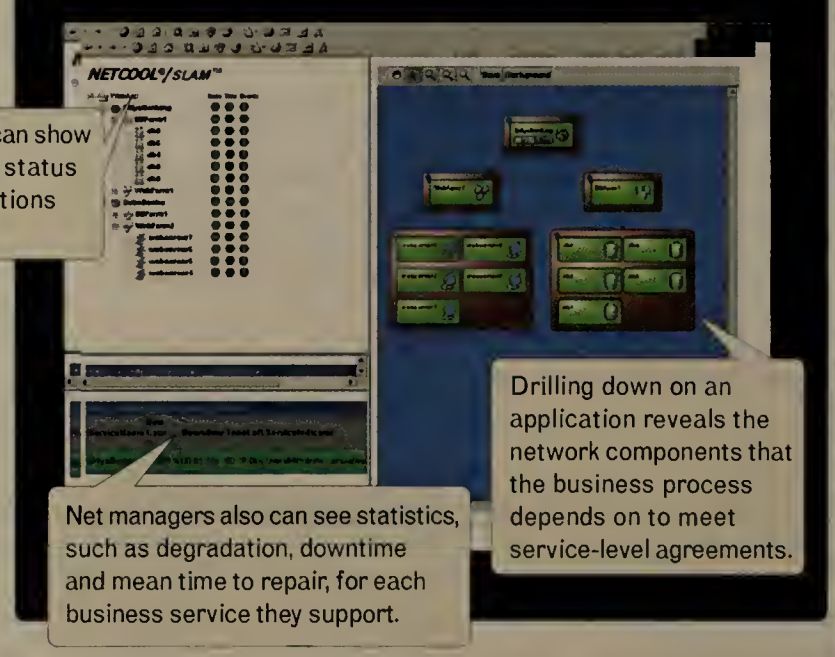
Also next week, BMC Software will unveil an agentless version of its Patrol systems management software. Patrol Express is designed for users looking to monitor the availability of networks at remote offices or branch locations without having to deploy a full-blown management system, the company says. Patrol Express monitors for availability and up/down status on network devices and servers.

The software is installed on a Windows, Unix or Linux server at the central location, from which network managers use BMC's service integration portal to define the elements to be managed. Remote service monitor software sits at each remote location and collects data from network devices, applications and Web servers. The remote software sends information back to the service portal.

Patrol Express costs $100 per monitored element. BMC also offers a subscription-based pricing model that lets customers pay for Patrol Express as they use it. ■

One-stop service shop

Micromuse's Netcool/SLA Manager shows customers when and where applications run into performance problems.





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Start-up investments continue to slide

Decline hits venture capital community for an unprecedented eighth straight quarter.

■ BY CAROLYN DUFFY MARSAN

Venture capital investments in network start-ups dropped for the eighth straight quarter this spring, marking the longest decline on record for private equity investments since these deals emerged in the 1970s and 1980s.

"This is the longest decline in 30 years," says Kirk Walden, national director of the quarterly MoneyTree survey compiled by PricewaterhouseCoopers, Venture Economics and the National Venture Capital Association. "But keep in mind that the $105 billion invested in 2000 was roughly 10 times higher than it had ever been. The historical rise in 1999 and 2000 was such a nosebleed that the fall is just as bad."

Venture firms invested $2.84 billion in 403 network start-ups during the second quarter of 2002, according to an analysis of the

QUARTERLY Venture capital Survey

MoneyTree survey conducted for *Network World*. That is down 14% from the previous quarter's total of $3.3 billion invested in roughly the same number of start-ups. (See a list of the top venture capital investments for the past quarter at www.nwfusion.com, DocFinder: 1753.)

A year ago, venture investments in the network industry — including network equipment, computers and peripherals, IT services, semiconductors, software and telecom — were more than double the current level. In the second quarter of 2001, venture firms invested $6.8 billion in 648 start-ups.

Two years ago, at the height of the Internet investment craze, network industry investments were more than five times larger than today. During the second quarter of 2000, venture firms invested $16.2 billion in 1,100 network start-ups. Many telecom ventures have since gone under.

"The decline in venture capital goes very much hand in hand with the overall downturn in technology," says Tracy Lefteroff, global managing partner of the venture capital practice at PricewaterhouseCoopers. "Unfortunately, the outlook is pretty grim given the fact that companies are not going to start spending on IT until they see the light at the end of the tunnel in terms of improvement in their businesses. The latest data on jobs and on the economy is pretty bad."

Lefteroff predicts that the third quarter of 2002 will see further decline in venture capital activity.

"A lot of the funds have slowed their pace of investment even more as they've seen the recovery turn into a protracted downturn," he says.

At the current $2 billion-plus level per quarter, venture investments in network start-ups are slightly ahead of where they were during 1998. And at $7 million, today's average deal outpaces the $5 million spent four years ago.

Despite the overall declines, the 10 largest deals of the quarter all topped $30 million. These include a $75 million investment in Mahi Networks, which is developing optical gear for metropolitan-area networks; a $49 million investment in Movaz Networks, which sells optical switch and routing products; and $31 million for optical Ethernet gear maker Internet Photonics (see related story, page 31).

Another 25 start-ups received between $20 million and $30 million last quarter. These include fiber-optic component and system manufacturers such as Picolight, which received $27 million, Ample Communications, which received $25 million, and Optical Solutions, which received $22 million.

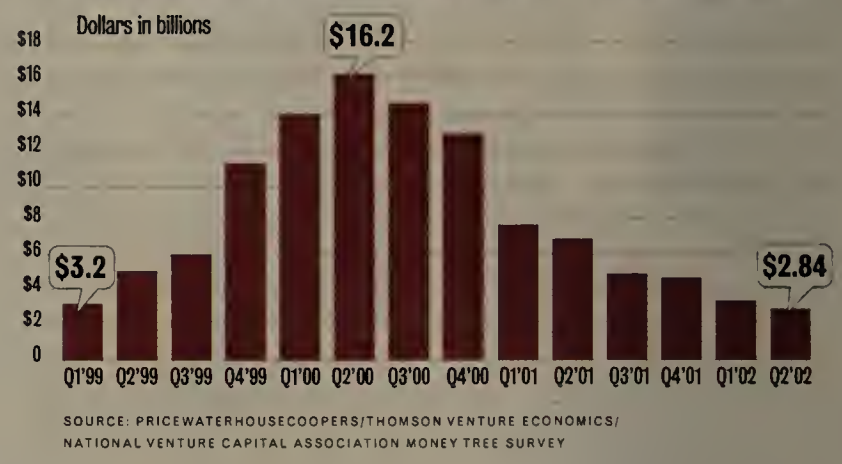
Within the network segment, software start-ups continued to receive the largest share, as they have for the last few quarters. Venture firms invested more than $1 billion in 199 software start-ups. Major deals include $30 million invested in both Empirix, which makes performance-testing software, and CBCA, which sells Internet-based healthcare software.

Another nine software start-ups received between $20 million and $30 million, including application vendors Apexon, which received $20 million, and Business Engine Software, which received $22 million.

Another bright spot was the rise in investment in IT services, which grew from $248 million in the first quarter to $360 million in the second quarter. ■

VC funding keeps sliding

Total investments decrease for eighth consecutive period.



SOURCE: PRICEWATERHOUSECOOPERS/THOMSON VENTURE ECONOMICS/ NATIONAL VENTURE CAPITAL ASSOCIATION MONEY TREE SURVEY

Microsoft API openness questioned

■ BY JOHN FONTANA

REDMOND, WASH. — While Microsoft last week promised to lay bare APIs and communication protocols in its Windows operating system, network executives say more details are needed before they can determine if the move will have any benefit for corporate IT.

"The attitude is wait and see," says Doug Spindler, an IT manager for a national laboratory he asked not be named. Given Microsoft's track record, he says, end users have to question whether the company's move will foster any IT benefits regarding product choice. "The past has shown that if you jump on quick [to Microsoft's proposals] you end up as the pioneer in the woods with the arrows in your back," he says.

> **"...If you jump on quick, you end up as the pioneer in the woods with arrows in your back."**
>
> **Doug Spindler**
> IT manager

Last week, Microsoft pre-empted a settlement agreement in its antitrust case and said it would release free of charge to developers some 300 APIs associated with its Internet Explorer, Media Player, Outlook Express, Microsoft Messenger and Microsoft Java Virtual Machine. It also announced a licensing program for a set of communications protocols. Third parties could license the protocols to create server software that works with Windows 2000, XP and any future operating systems.

The idea is that Microsoft will loosen the stranglehold that the court determined it had on a market referred to during the case as "middleware," applications that run on Windows.

Microsoft began doing that two weeks ago with Service Pack 3 for Win 2000, which contains a configuration component for removing certain middleware products such as the Internet Explorer browser. A similar service pack for XP is due at the end of next month.

In theory, the benefit of publishing APIs is that third-party applications would achieve parity with Microsoft-created applications in terms of integration with the operating system, and that users could eliminate Microsoft's bundled products in favor of those applications.

But observers say Microsoft has offered little detail on which versions of APIs and protocols it will release and for which operating systems that it is hard to determine the impact.

"The questions are, is Microsoft committed to live by these APIs and protocols for a certain length of time, and what are the terms and conditions of the licensing," says Dan Kusnetzky, an analyst at IDC. "All this needs to be sorted out before we can determine any benefit for IT."

He says if Microsoft opens its APIs and then changes them soon after, it will waste the time and money that corporations and independent software vendors have invested in building applications that incorporate those APIs. He says it will take 12 to18 months for the APIs and protocols to be tested and implemented in products.

But Microsoft is putting on a marketing full-court press around its decision to open its technology.

"There is very substantial intellectual property and valuable technology in these protocols," Brad Smith, senior vice president and general counsel for Microsoft, said during a conference call last week. He said the company has an obligation to live up to the proposed settlement.

He said Microsoft was holding back one API associated with its five middleware products because it could expose users to more and stronger viruses if used by malicious developers. ■



■ THIS WEEK'S QUESTION:

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Tech firms quibble about accounting of stock options

■ BY JENNIFER MEARS

Accounting for stock options — the perk of choice for many technology companies — is under fire in the wake of recent corporate financial failings.

Most companies don't deduct stock option costs from profits; rather they list their potential costs in an earnings statement footnote. But recent financial scandals involving big stock option packages for executives at companies such as Enron and WorldCom have led to a renewed call for how options are accounted for. Dozens of companies, such as Coca-Cola, Bank One and General Electric, have recently announced plans to report stock options as expenses. Level 3 Communications and other telecom companies do the same.

But other companies are against that notion. Intel last week said it would not report its options as an expense, saying doing so would be too complicated. "There is no good valuation model to determine the fair value of unexercised employee stock options," said Andy Bryant, Intel's CFO, in a statement. "Including an unreliable estimate of the fair value of options in the income statement would distort earnings."

Other companies, such as Cisco and Microsoft, also have said they would not list stock options on their income statements. Microsoft claimed that including option costs would have cut billions of dollars off its reported yearly profits.

Currently, companies are not required to list stock options as an expense, although the Financial Accounting Standards Board (FASB), which sets U.S. accounting guidelines, views the practice as preferable. The FASB attempted to mandate as much in the mid-1990s but was shot down by political and business opposition.

As a result, the FASB is reviewing the best way to have companies report those costs, although it has stopped short of requiring all companies to treat options as expenses. Backers of the mandate say doing so would help present a more accurate picture of a company's financial performance.

Intel's Bryant said the debate over whether to list stock options as an expense is "misdirected."

"Rather than focusing on the accounting for broad-based employee stock options, the debate should center on excessive executive compensation," he said. "Many good ways to attack that problem exist, ranging from stockholder approval of option plans to assuring outside directors have more power and independence."

Some high-tech companies, such as Amazon.com and Computer Associates, have elected to make the change. Amazon announced last month that beginning in fiscal 2003 all stock-based awards granted will be expensed. CA said it would begin reporting the cost of new stock options as expenses next fiscal year, which starts April 1.

"The new policy puts options on an equal footing with other kinds of compensation and will allow us to continue to design compensation packages that motivate employees and align their interests with those of all share owners," Sanjay Kumar, CA's CEO, said in a statement.

The divisiveness of the issue could reduce stock options as a payroll benefit.

"My guess is this is going to complicate things and you might see fewer options granted because it's just becoming too much of an issue to deal with," says Mike Schiff, vice president of e-business and business intelligence at Current Analysis. ■

EMC midrange array boasts advanced features

■ BY DENI CONNOR



The CX600 borrows management and other technologies from the high-end Symmetrix line.

HOPKINTON, MASS. — EMC this week will launch a midrange storage array that has many advanced features in common with the company's high-end Symmetrix arrays, but costs hundreds of thousands of dollars less.

The Clariion CX600, which fills a gap between EMC's FC4700 and high-end Symmetrix devices, shares replication, load balancing and other management software with Symmetrix systems.

"That lets us reduce the number of different software systems our staff has to learn," says Tim Hayes, manager of network systems at Rutgers University in New Brunswick, N.J.

EMC has migrated the IP network technology from its Symmetrix Remote Data Facility replication software into Clariion's MirrorView software, and has enabled its DB Tuner database management and monitoring software along with its Data Manager back-up and recovery software to run on the CX600.

Analysts say competitors, such as Hewlett-Packard and IBM, also are looking to provide common software technologies across their storage lines.

The CX600's new architecture gives it three times the processing power and 3.5 times the bandwidth of the FC4700. It uses four 2-GHz CPUs; the FC4700 uses four 733-MHz CPUs. It processes up to 1,300M byte/sec of data compared with the FC4700, which handles up to 360M byte/sec. Further, the CX600 has four times the cache memory of the FC4700 and uses 2G bit/sec Fibre Channel throughout to give it better performance and reliability.

The CX600, which will be resold by Dell, Fujitsu and Unisys, starts at $115,000.

EMC, www.emc.com

D-day

continued from page 1

Cisco's John Chambers, Oracle's Larry Ellison, IBM's Sam Palmisano, Sun's Scott McNealy and Verizon's Ivan Seidenberg.

Investors and Wall Street are watching. For instance, rumors that Cisco would miss its deadline contributed to an 8% dip in its stock prices earlier this month, prompting the company to issue a statement that it planned to comply.

"It would definitely raise an eyebrow if you didn't sign it," says Joan Ryan, CFO for telecom equipment maker Tellabs. Ryan and Tellabs CEO Michael Birck filed their certifications last week — well ahead of their December deadline. "We wanted our investors to have the confidence that what they were looking at was accurate and complete," Ryan says.

By order of the SEC, the CEOs and CFOs must sign under oath that the content of their companies' most recent SEC filings known as Form 8-K, Form 10-K and Form 10-Q reports are true and omit no essential facts. They also must state whether they have reviewed the filings with the companies' audit committees. The SEC decides case by case whether to take action against companies that subsequently turn up information that alters these reports, according to an SEC spokesman.



"The prospect of possibly doing prison time will have infinitely more impact than these certifications will."

Ed Ketz
Associate professor of accounting at Pennsylvania State University's Smeal College of Business

The certification mandate came about in the aftermath of the Enron and WorldCom bankruptcy filings as a way to hold top executives personally responsible if they knowingly file false statements.

Some companies are formally restating their financial histories before signing the pledge to correct questionable past characterization of revenues and expenses. Lucent and Qwest, among others, are revising SEC reports they already have filed and are under SEC investigation.

Lucent says it is correcting a $679 million error and working to meet the SEC certification filing deadline. Qwest says CEO Richard Notebaert and CFO Oren Shaffer cannot file the statement by the deadline because they are too new to the company to know whether the most recent reports are accurate. They started working there in June and July, respectively. Qwest is revising its reports from 2000 and 2001 to account for at least $1.1 billion in inflated revenue figures. Instead it will file an acceptable alternative explaining the problems with the initial filings.

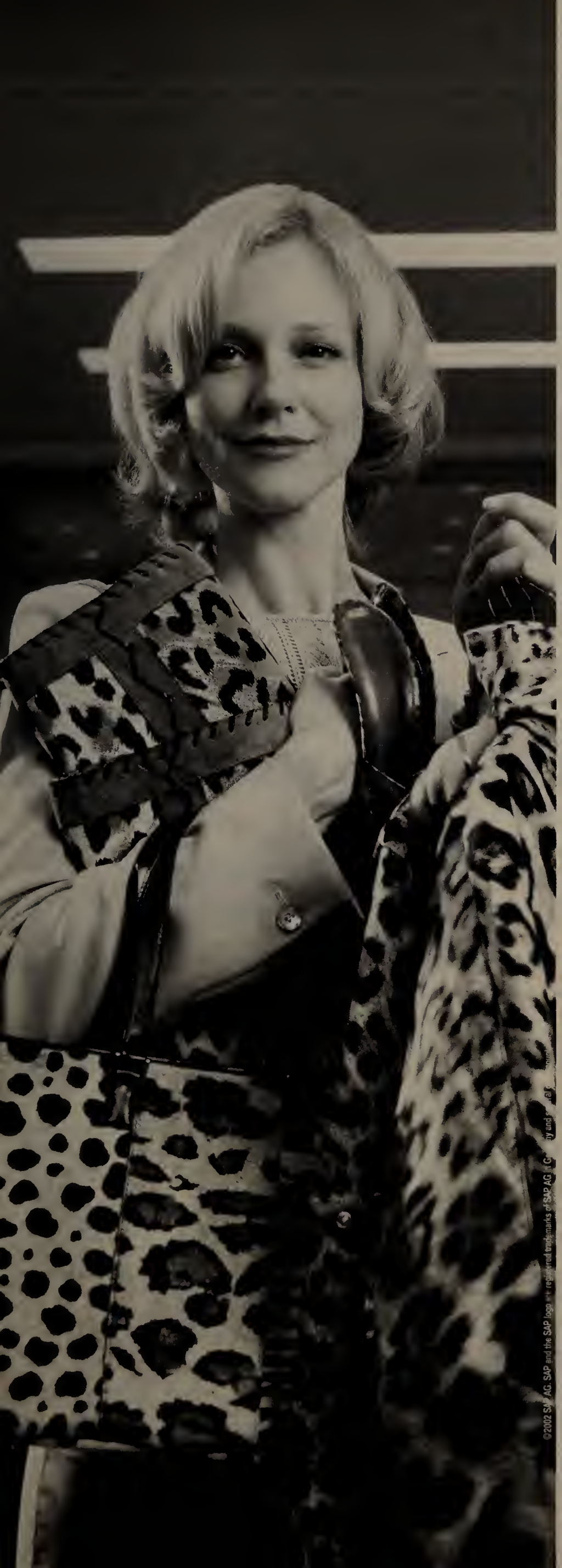
Some CEOs have said they don't want to sign the certifications but have given up their arguments, says Theodore Sonde, a former SEC enforcement official who is now an attorney in the Washington, D.C., office of Crowell & Moring specializing in SEC enforcement issues.

"Most said, 'Well, I wasn't responsible for the original filing. I'm the new boy on the block. Or, I wasn't there at the time.' That was sort of an initial reaction that I heard," Sonde says. "Then on further reflection and probably discussions with their lawyers they concluded they had to."

But the veracity statements pack no more wallop than regulations that have been in place for years, says Ed Ketz, associate professor of accounting at Pennsylvania State's Smeal College of Business. "After all, if I'm willing to lie in the financial statements, I would be willing to lie in terms of certifying them."

Ketz doubts the SEC mandate will make companies more cautious. "Absolutely not. What will make firms more cautious are the arrests that have taken place with Adelphia and WorldCom," he says. "The prospect of possibly doing prison time will have infinitely more impact than these certifications will." ■

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Linux
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Aberdeen's Claybrook also sees Sun's offering as the first real threat to Red Hat, despite the recent formation of UnitedLinux, an effort by four other Linux companies to develop a common Linux distribution (see www.nwfusion.com, DocFinder: 9648).

LINUXWORLD CONFERENCE & EXPO

Despite analyst raves over Sun's strategy, some customers are miffed. They would prefer to see the company focus its attention on porting the newest version of its Unix operating system — Solaris 9 — to Intel platforms that typically cost thousands of dollars less than Sun's SPARC-based machines.

Sun plans to offer Solaris 9 on its Cobalt LX50s, but has no plans to offer it on a broader set of Intel machines, as it has with Solaris 8.

"I am astonished that after eight months, Sun's management still refuses to hear what its customers really have been asking for," says John Groenveld, associate research engineer for the Applied Research Lab at Pennsylvania State University in State College. "I would have been interested in Solaris running on a new line of Sun X86-based systems had [Sun] addressed the core problems of their relationship with Solaris customers."

But it's plain to see why Sun, whose CEO Scott McNealy will present a keynote address at LinuxWorld — is increasingly interested in Linux. While the company dominates the Unix market, with more than 50% share by revenue, according to IDC, the market for high-end servers is shrinking and is expected to continue on that path. The story is different with Linux — IDC predicts that revenue from the sale of Linux servers will more than triple from $80 million last year to $280 million by 2006.

The Cobalt LX50s are 1U (1.75-inch) servers featuring a version of Linux built by Sun on top of the base 2.4 Linux kernel and adapted from Linux technology embedded in the server appliances that Sun obtained through its acquisition of Cobalt Networks in 2000. Sun says its Linux software will not be sold separately, but the core distribution will be licensed under the GNU Public License, which means the source code will be available for free.

The servers, which use one or two Pentium III 1.4-GHz processors and include at least one 36-G byte drives, will start at $2,800, roughly the same as a Dell PowerEdge 1650 with Red Hat Linux preinstalled.

Aberdeen's Claybrook doesn't see UnitedLinux as a strong competitor. "I don't think Red Hat vs. UnitedLinux will develop into anything," he says. "Red Hat has had more brand recognition than anyone, and they're very much geared toward enterprises. Sun will get recognition in Linux because they are Sun ... We'll see some good competition over the next couple of years."

Red Hat officials say they aren't fazed. "Sun's message with Linux will be that if you want to do large-enterprise stuff, take Solaris," says Mark de Visser, vice president of marketing for Red Hat, which owns about half the Linux server market. "If your needs are less mission-critical, that's when Linux is a good player.

Meanwhile, [Red Hat at LinuxWorld] will be demonstrating large-scale deployment Linux technology, and how companies are adopting Linux to replace Solaris itself."

"It's old news if you come out now and say Linux is a good player at the edge of network" for such tasks as Web, file and print serving," he says. "It was a while ago when we all discovered that." ■

A three-horse race?

With the expected release of Sun's own Linux flavor this week, here's how the enterprise Linux market is shaping up:

Red Hat: The leading Linux distribution has extensive support from independant software vendors, making it attractive to companies that want to use Linux for applications beyond Web, file, print and e-mail serving.

UnitedLinux: A joint effort by SuSE, Caldera, Conectiva and TurboLinux to offer a base Linux distribution that each company will enhance and resell. It could appeal to customers confused by numerous Linux distributions with different features.

Sun Linux: The much-anticipated software is the first home-built Linux distribution from a major IT vendor. Sun will look to exploit its large user base and expertise in scaling software for enterprise networks.

Teleworkers get VPN service

Positive Networks offers security and storage options.

■ BY TONI KISTNER

OVERLAND PARK, MO. — With a field full of IP Security and Secure Sockets Layer-based VPN products and services geared to teleworkers, most do little to help network executives maintain the security of their remote PCs.

Newcomer Positive Networks today will launch PositivePro, a VPN service beefed up with a slew of end-user security applications, including software firewall, antivirus, secure file storage, and optional back-up and application distribution. A policy manager lets network managers configure settings, policies and actions for each user and monitor them in real time. If a teleworker disables the firewall or antivirus software, PositivePro can shut down the VPN tunnel, send an alert to the network manager, or send the user to a captive portal site with instructions on enabling the firewall to regain access.

PositivePro is designed for teleworkers who use their PC for work or share a PC with another household member. When a user logs on to the VPN service, it performs a security audit to ensure there are no open ports, and antivirus and firewall are enabled. Simultaneously, the teleworker's corporate settings appear (wallpaper, bookmarks, available network drives and corporate e-mail). When the user logs off, his personal settings automatically return.

"We've got 450 IS employees who are clamoring to do programming and technical support from home," says Eric Foster, vice president of data security for UMB Bank in Kansas City, Mo. "We looked at big vendors like Cisco and managed service providers like Axcelerent. But we were intrigued by what Positive had to offer — a solution engineered to address the security concerns of remote-worker connectivity."

The PositivePro service consists of an XML messaging system that includes NetScreen and Cisco VPN concentrators, retooled SafeNet VPN clients, and the cornerstone policy manager, a Linux/Unix-based system of databases, servers and algorithms that let each remote user receive a custom set of security settings.

The service employs McAfee antivirus software, supports Trend Micro, and a proprietary software firewall.

No hardware or software is required on the customer premises, and VPN provisioning can be done within a few hours, says marketing vice president Evan Conway. The initial version will be based on IPSec, with an SSL edition expected in early fall.

UMB Bank is completing a 100-user pilot program and plans to roll out the service to 1,000 workers by year-end 2003. Foster reports the bank will save 35% over the cost of another managed VPN solution, mostly in support and security software costs.

Positive's service costs $15 to $50 per month/per user based on the number of users.

Positive: www.positivenetworks.com

PROFILE: POSITIVE NETWORKS

Location:	Overland Park, Mo
Founded:	March 2001
Management:	Founder and CEO Timothy Sutton, former president of Sprint's Broadband Wireless Group
Primary business:	Managed VPN service with added features geared to remote and mobile employees.
Financing:	Undisclosed amount of funding from Digital Coast Ventures and private investors.
Competitors:	Axcelerent, Neoteris, NetSilica, Cisco and other remote access VPN players.
Employees:	Nearly 40.

Linux news from HP, IBM

Hewlett-Packard this week will debut Secure Linux 2.0, a modified version of Red Hat Linux in which certain parts of the operating system can be locked to prevent intrusion.

Version 2.0 will include data encryption of system files that are critical to Linux, and more "signatures" for identifying new Linux hacks. The software now includes a feature that can contain a hacker to the area where the server was breached.

Separately, IBM last week announced a list of new Linux customers, bringing its roster to 4,600. New customers include Air New Zealand and Deutsche Telekom, both of which IBM says used its zSeries servers to replace Sun Solaris servers for e-mail and Web serving, and the Jet Propulsion Laboratory, which is using a cluster of 66 IBM Linux servers to analyze scientific data.

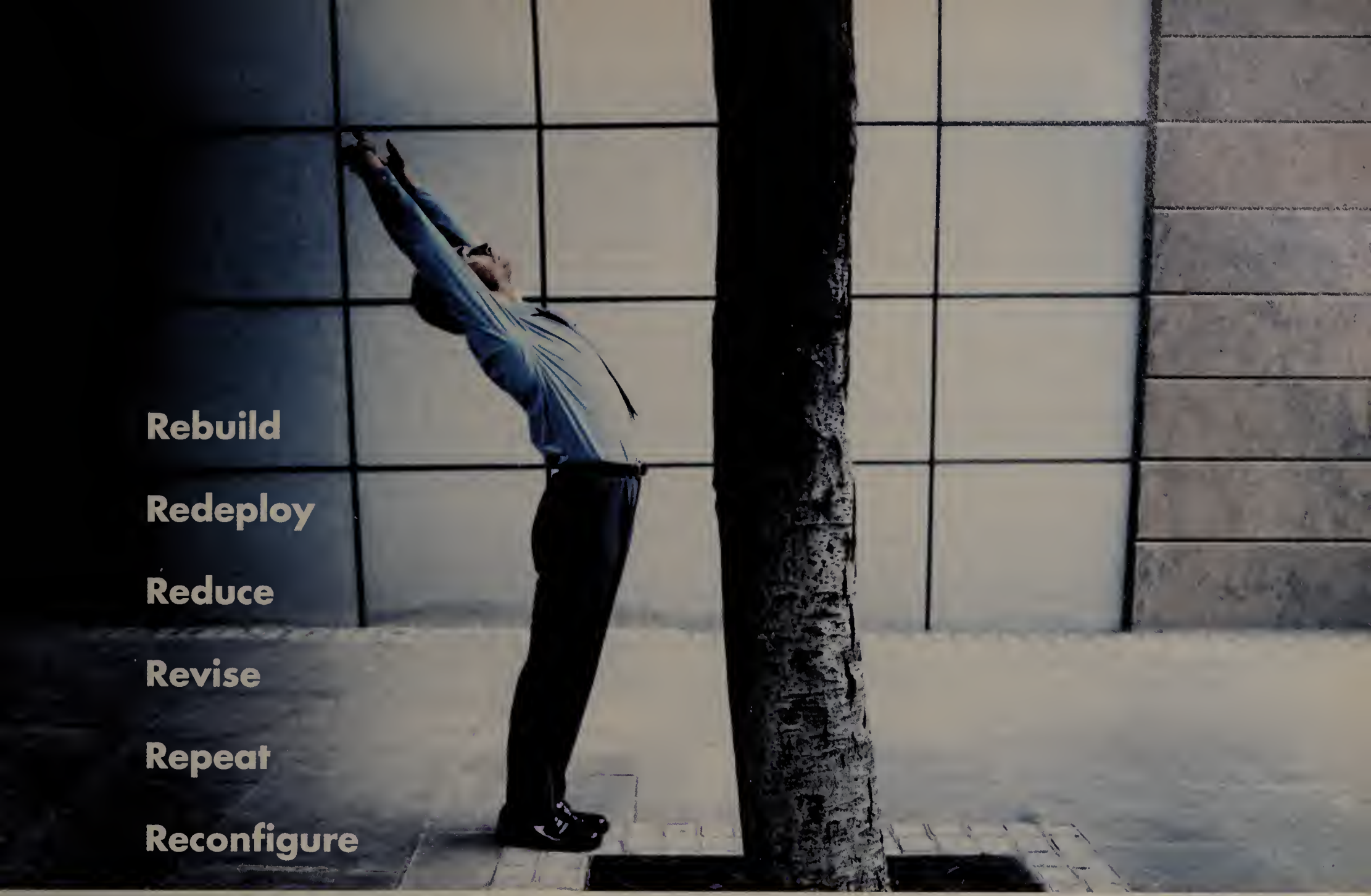
— Phil Hochmuth



More online!

Read a Q&A with Sun's chief engineer on Linux, competition with Microsoft's .Net and more.

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Blogs

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state knowledgebase."

The Google appliance is a rack-mounted server loaded with the Google software that can be used as the search engine for an enterprise intranet or Web site.

For those who've managed to avoid the hyperbole, Weblogs basically are easy-to-use personal Web sites — no knowledge of HTML is necessary — where "bloggers" post entries on any topic. Readers find Weblogs through search engines, referring links or e-mail tips from friends who share their interests. New readers become referrers, causing posts to be spread around to a group that is continually self-selecting.

Dave Winer, a co-founder of UserLand, which sells Weblogging and content management software, describes Weblogs this way (see www.nwfusion.com, DocFinder: 1752):

"Weblogs are often-updated sites that point to articles elsewhere on the Web, often with comments, and to on-site articles. A Weblog is kind of a continual tour, with a human guide who you get to know.

Blogs in the enterprise

Weblogs have become a way of getting information online quickly. Radio UserLand lets you type an entry, click a button and post.



Some Weblog links

- Utah CIO Phil Windley's Weblog: **www.windley.com**
- Utah IT staffer Dave McNamee's Weblog (ieft) **http://radio.weblogs.com/0110870/**
- A list of Weblog software: **www.lights.com/weblogs/tools.html**
- One Weblogger's view of popular blogging tools: **http://hotwired.lycos.com/webmonkey/02/18/index3a.html**
- A UserLand list of recently changed Weblogs (you can add yours): **www.weblogs.com**
- Entry on UDDI, in a Weblog on peer-to-peer computing: **http://p2psmoke.org/archives/000194.html**

"Blogging creates a sense of ownership," he says. "I have spent only a few hours on my site, but it is mine, and I can do whatever I want with the design or content."

Such posting freedom comes with a need to post responsibly, according to Windley, who wants to see most of these blogs eventually "inside" the state's firewall, available only to state employees.

Windley's blog started getting attention when he wrote an entry about how warchalking (using standard symbols, often chalked onto a curb or side of a building, to identify available wireless access points) could help state employees locate access points. Someone found entry and passed it on to Matt Jones, who's generally credited with coming up with the warchalk idea. Jones in turn posted a reference on his own Web site to Windley's blog, which at once began getting more traffic.

Windley, a former computer science professor and entrepreneur, had tracked the rise of Weblogging for a while when, last spring, he read a column by Internet consultant and former *Byte Magazine* editor Jon Udell about his own Weblog, based on UserLand's Radio software.

"I'd been looking for a vehicle to communicate my ideas about enterprise IT to my staff and to others," Windley says. The Weblog seemed like an ideal way to post short essays or responses to current issues and have them easily accessed by a "captive audience of 900 employees who have a vested interest in what I think about IT," Windley says with a laugh.

Traditional enterprise collaboration tools, including remote meeting and similar applications, have not proven successful in Windley's experiments.

"They're difficult for people to catch on to, because they're highly structured applications," he says. A pilot project with a remote meeting application worked well for people who were scattered over several sites, but not with workgroups whose members were in nearby offices.

"They couldn't see enough value [in the application] to force them into [using] the tool multiple times a day," he says.

By contrast, an array of Weblogging products make creating and maintaining Weblogs very easy. Webloggers can be alerted to changes in other Weblogs through the Rich Site Summary format, a set of tags for sharing headlines and other Web content with other Web sites. It's widely used, by sites as diverse as CNN, Disney, and Slashdot.

Weblogging enthusiasts say the result is a community created partly around shared information, but more importantly around shared insight. Typically, it becomes a community about which group members care deeply.

That passionate involvement in issues and problem solving is one of the things that attracts executives like Windley to Weblogs. Is it possible that a Web phenomenon that thrives on ad hoc information pooling and referrals can become an enterprise knowledge management system that can boost productivity? Windley's not sure, in part because only a handful of IT staffers have launched their Weblogs.

"I don't know how many people will be interested in it," he says. "I've been kind of forcing it down some people's throats."

Among the early starters is David McNamee, one of the CIO's newly minted product managers, who act as liaison between various IT services and application groups and the state agencies — called clients — that use them. He's convinced that a Weblog can help his clients understand his new role, and learn to take advantage of it to improve their agencies' performance. "I would have no hope of communication with so many different people ... without some kind of asynchronous tool [such as a Weblog]," he says.

Software alone doesn't create a Weblog.

"Getting started is hard, and it takes a certain kind of person who likes to write," Windley says. He finds writing helps him think more clearly, so he adds to the Weblog regularly. But during the first few months, there was little response.

McNamee says such reservations are countered by the personal control that authors have over their logs.

Most importantly, the Weblogs create and sustain a community that values the information being shared. The result, Webloggers say, is more like a distillation into collective wisdom instead of the raw data, and even rawer opinions, often appearing in online newsgroups and bulletin boards.

"Weblogging is strange and bizarre, but it works," says Scott Johnson, president of The FuzzyGroup, a consulting firm that specializes in sophisticated Web development, including blogs. A self-confessed "repentant dot-commer," and a latecomer to Weblogging, Johnson says that Weblogs are "highly ad hoc" and ought to be inefficient as tools to capture and spread organizational knowledge. But in practice, the opposite is true.

The classic interactivity tools for the Web, such as discussion groups, Usenet and mailing lists, all break down when large numbers of people show up and use them, he says.

"My blog is technically available to anyone in the world, but I have a hard-core audience of less than 1,000," he says. "Weblogs make one-to-many communications really easy, but also are finely tuned narrowcasters." Johnson returned from Europe and "blogged" a post on how to do international expense reports so you don't lose money on the foreign exchange rate.

"Classically, you create something like this and lock it up, so it's distributed to just 10 people, for example," he says. "But put it in a blog and I expect in a few weeks it will [attract enough readers to warrant] a high Google rating." ■

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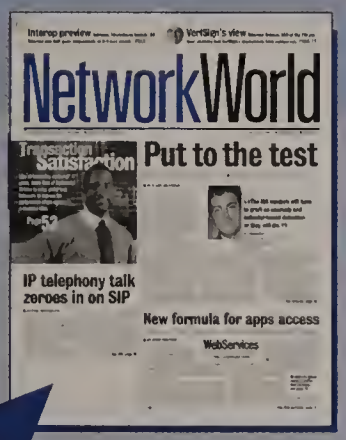
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Short Takes

■ **Platform Computing** is introducing new management software for Linux, Solaris or Hewlett-Packard's HP-UX server clusters that claims to ease workload and systems management responsibilities for net executives. **Platform Clusterware 5** works with blade or Intel servers. With the software, users can schedule jobs that will be executed on the cluster while managing job distribution and the cluster itself. The software resides on one of the servers in the cluster and is managed from a Web browser interface. Platform Clusterware is available now for $120 per processor, per year. www.platform.com

■ **IBM** recently doubled the size of a precertified cluster of Unix servers that helps save space and cut management costs. IBM's **Cluster 1600** now will link as many as 32 of its most powerful Unix servers in a configuration that the company has tuned to get the best performance out of the systems. IBM offers 32 of its p690 servers, each with 32 processors, or 32 of its p670 servers with 16 processors, along with its cluster management software. Both configurations are twice the size of its previous cluster offerings for those systems. The Cluster 1600 runs IBM's AIX version of Unix. The servers also can be split up into multiple partitions, each running AIX or Linux. A Cluster 1600 with two 32-way p690 servers and a control workstation starts at about $2.4 million. www.ibm.com

■ **Sun** last week revved up its midrange and high-end server lines, adding support for its fastest processor to date. Already available in some workstations, Sun's 1.05-GHz UltraSPARC III processor will now also ship with its Sun Fire 3800, 4800 and 6800 midrange servers. The highest-end Sun Fire 12K and 15K servers also will use the speedy chip. The systems still will be offered with the current 900MHz UltraSPARC III chips. The Sun Fire servers form the core of the company's server line. www.sun.com

Q&A

3Com chief: Net market looking up



3Com CEO Bruce Claflin was in a good mood when he came to the Network World *offices recently to discuss the state of his company and the industry with Senior Editor Phil Hochmuth and Editor in Chief John Dix. With his embattled firm's losses down by almost $500 million from year ago, and its enterprise business group profitable again, Claflin said he sees good things to come for 3Com and the network business.*

The question of commoditization comes up in the market. Have we reached the point where networks become a utility? Could some of this industry malaise be a byproduct of that — that this stuff is pretty easy to do?

You could say that's the inevitable endpoint of all this [that networking is easy to do] but this has been the inevitable endpoint for 10 years. I tend to think of products in three classes: the complex solution environment; standards-based and value-oriented products; then at some point there's a commoditization. Our experience is that enterprises rarely want commoditization because it inevitably leaves them short of certain things they need to run their business.... I believe there is a play for good pricing, but it's not commodity. It's a differentiated product that respects what the business environment needs. I don't think commoditization will ever happen in the enterprise in my lifetime, and we don't want to play there as a business. In my definition of the world, the majority of enterprise technology has not reached commodity. But it is going through this standards and value-oriented phase. And that's where we want to play.

Has the enterprise IT spending slump bottomed out?

I think we have.... There are clear signs of strength ... not just because our businesses have grown, but some of our competitors have cited strengthening in U.S. business. There is weakness in Europe.... If we look back at 2002 ... we'll probably have low- to single-mid-digit growth. So that's not

See Claflin, page 18

Server ties Web to audioconferencing

■ **BY JASON MESERVE**

WALTHAM, MASS. — Budget conscious CIOs and network executives looking to save some money on conference calling have a new option: Bring the service in house with eDial's Conferencing Server 3.0.

The newest entry from eDial is a rack-mounted unit that combines a Web server and audio bridge for connecting conference participants by phone for audio and the Web to view presentations, documents and spreadsheets via a standard browser. Installed in a telecom closet or data center floor, the Conferencing Server is built on Intel hardware running Red Hat Linux. A gateway card connects the server to the phone network using a T-1 or ISDN Primary Rate Interface (PRI) line. The server also supports Session Initiation Protocol-based voice-over-IP connections. Previous versions of the Conferencing Server supported only audio and contained no presentation capabilities.

"We only assume that the viewer has a phone and Internet connection," says Bill Andrews, senior vice president of marketing and sales at eDial.

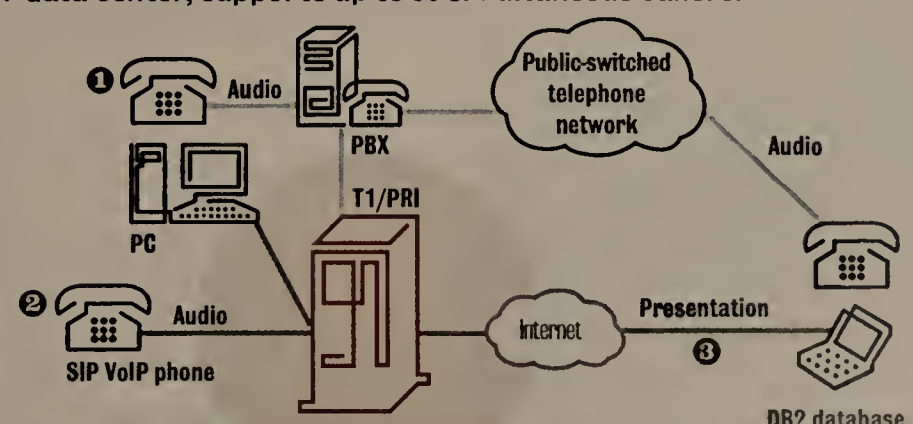
A Web-based interface lets users reserve a call time, send out invitations and set the server to call participants at the specified time. Information such as department name and client number also can be captured for charge-back purposes. Once in a call, the leader can select to mute specific attendees, have music played for those on hold, and can control the pace of the slide show or document presentation.

The cost savings and return on investment (ROI) comes by using a company's standard long-distance rates for phone calls rather than the premium a service provider

See EDial, page 18

EDial Conferencing Server 3.0

EDial's Audio/Webconferencing appliance, which sits in a telecom closet or data center, supports up to 96 simultaneous callers.



1 Users dial in to call via public phone network or internal PBX.

2 Internal users can be connected using SIP-based voice-over-IP telephony.

3 The built-in Web server delivers presentations using standard HTML.

WIRED WINDOWS

Dave Kearns



Microsoft: Muddying the waters

Microsoft has made a couple of announcements recently about major undertakings — .Net and the antitrust settlement. Neither announcement, though, could be considered as clearing the air, but seemed to be designed to keep the waters muddied.

Last week, Microsoft's Brad Smith, senior vice president and general counsel, outlined steps Microsoft would take to implement the proposed settlement of its antitrust suit. But the only problem is that the settlement isn't final. Nor was the Department of Justice asked to sign off on the Microsoft initiative (as the proposed settlement requires). Evidently the Justice Department can only stomach a certain amount of hypocrisy — much less than Redmond can.

I'm not at all sure what Microsoft's point was. It appears all but certain that Judge Colleen Kollar-Kotelly will make changes to the settlement if not entirely replace it with her own judgment. In either case, what Microsoft announced last week might have to be modified. So what was it all about?

It's all about staking out a position. Microsoft now can claim to have begun a good faith effort to implement the settlement. The company can point to its behavior as showing that it is now a good citizen of the corporate community. It can request that Kollar-Kotelly shouldn't make changes to these parts of the settlement because it would impose a hardship on Bill Gates and Co.

Hogwash. Microsoft is doing exactly what it wants but coloring it as being part of the settlement. It means nothing.

Speaking of things with no meaning, Microsoft launched Phase II of its .Net initiative a few weeks ago. What? You missed the end of Phase I? So did just about everyone else east and south of Redmond.

But reading the words of Gates on that occasion, it appears to be a claim for inventing XML, or at least being the first folks to implement it. That probably came as a big surprise to the people who have been looking to create XML standards for a number of years.

In fact, it was only a week before the start of Phase II that Microsoft announced it would support XML (in the form of the Security Assertions Markup Language) for purposes of federated identity and single sign-on (something Microsoft's .Net My-Services, aka HailStorm, was supposed to do).

Kearns, a former network administrator, is a freelance writer and consultant in Silicon Valley. He can be reached at wired @vquill.com.

Tip of the Week

I know you're bright enough to know the difference between **.Net services** and **.Net Server** (the successor to Windows 2000), but even Microsoft's own PR department can't always keep them straight. They seem to think you need .Net Server to implement .Net services. You don't. Keep that in mind.

Q A

Claflin

continued from page 17

exactly roaring growth, but it's fundamentally different from what's been going on in the last couple of years. There will be some growth, particularly in the areas that we're investing in — wireless and IP telephony.

What technologies have businesses been looking to buy through the down times?

There's an awful lot of interest around LAN telephony. Every single senior technical executive wants to know and understand it. Many are now deploying it. One reason I have optimism about that, is that LAN telephony has hit a knee-bend in the curve, where it's significantly more mature and that it's beginning to get deployed in some volume.

So if we are coming up to the knee-bend in the curve in LAN telephony, is the fear that traditional telecom players will wake up and start to roll over the market?

We recognize that there is a powerful incumbency, particularly in large accounts where it's hard to displace.... I believe the incumbents have woken up, and I expect the competition will get fiercer. Although I love to compete and beat someone, I think overall it will grow the market and legitimize it.

What is 3Com's target customer in the enterprise?

We're always talking about being a [small to midsize enterprise] company, but were more precisely a [midsize enterprise] company. We also sell to the large enterprises, particularly if their environment is distributed. You may have, let's say, a large retailer with a corporate office, and in that environment, we're not well represented. But if you go to the stores, you'll find that we're in all of them.... Where we don't play is where the location has a very high number of users, where there are high-end products, and [the environment] is multiprotocol. That's usually the headquarters of a big organization. But as you move to a more distributed environment, we play quite well. And as that midsize enterprise gets larger, they don't have to carry the heritage of multiple protocols. They're doing it Ethernet only, and that is a great place for us because of the scaling level of Ethernet.

You've talked a lot about different levels of growth — such as 3Com's Business Networks Company, but you're half the company you were last year. What's the other half of the story?

Our 10/100 [network interface card] business [Business Connectivity Company] is in an inevitable and inexorable high rate of decline. That will not change. I was looking at a chart that shows what the average sale price was for a standard 10/100 connection NIC 2 years ago, it was around $80. I looked at what the price is today, and it's around $4. What will it be two years from now? Probably $1. 10/100 basic connections have basically been swept up into silicon. That part of our business is in absolute decline ...so we expect revenue to continue to decline, certainly over the next several quarters.

The other is CommWorks. The company was at around $167 million [in sales] a year and a half ago, to around $44 million last year. We think it's hit the bottom, but we aren't forecasting any dramatic growth. So If CommWorks is flat, BCC is in decline, and BNC is growing, we think for the coming year in terms of bringing in revenue, it will be tough.

What is the next big thing in the market?

The problem with the next big thing is that no one ever recognizes it until it's already in place. When routing was coming in, I didn't read a lot about it that it was the next big thing, but once it kind of got a foothold and was taking off, in retrospect, it was clear. In that sense, I don't feel particularly bad that no one has really articulated it. I think that's the nature of the beast. I'd say in general, intelligence in the network to do more: to manage security, deliver content, screen out intrusion. These are all attributes you'll see in networking. Things that can self-configure and self-maintain.... Up until now, it's basically been about dumb fast pipes that can mediate traffic or manage protocols. I think there's a lot more intelligence that goes into networking than that. ■



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EDial

continued from page 17

charges. "Look at the price you're paying for audioconferencing services — typically 13 to 17 cents a minute," says David Alexander, an industry analyst at Frost and Sullivan. "If they come in with a bridge and say they can knock the price down to 4 cents a minute or less, that's an intriguing proposition."

For NerveWire, a management consulting firm in Newton, Mass., whose biggest telecom item is audioconferencing, the ROI came within six months of installing an audio-only eDial server in their data center, says CIO Mark Greenlaw.

"That's viewing [the ROI] purely as an audioconferencing solution," he says. "We've cut our monthly spending in half, and that's just rolling it out to the top 20 conferencing users."

NerveWire recently upgraded to Version 3.0 and uses the Web presentation feature in its initial pitch to perspective clients, saving travel costs and time. The one problem is limited capacity to the eDial box. One PRI line connects the server to the phone network, capping the number of simultaneous users at 23. Greenlaw says he hopes to add another circuit later this year to boost capacity.

EDial, which competes with Latitude, Sonexis and Spectel for enterprise conferencing dollars, says it is going after the 80% of the market that is looking to do simple phone calls supplemented by Web presentations. With a limit of 48 simultaneous users on a single call, eDial is not suited for huge investor calls. The server also does not support T.120 and other online collaboration protocols.

The eDial Conferencing Server comes with 24, 48 or 96 ports. One call on the 96-port server can support up to 48 simultaneous users. Pricing ranges from $28,000 to $78,000.

Edial: www.edial.com



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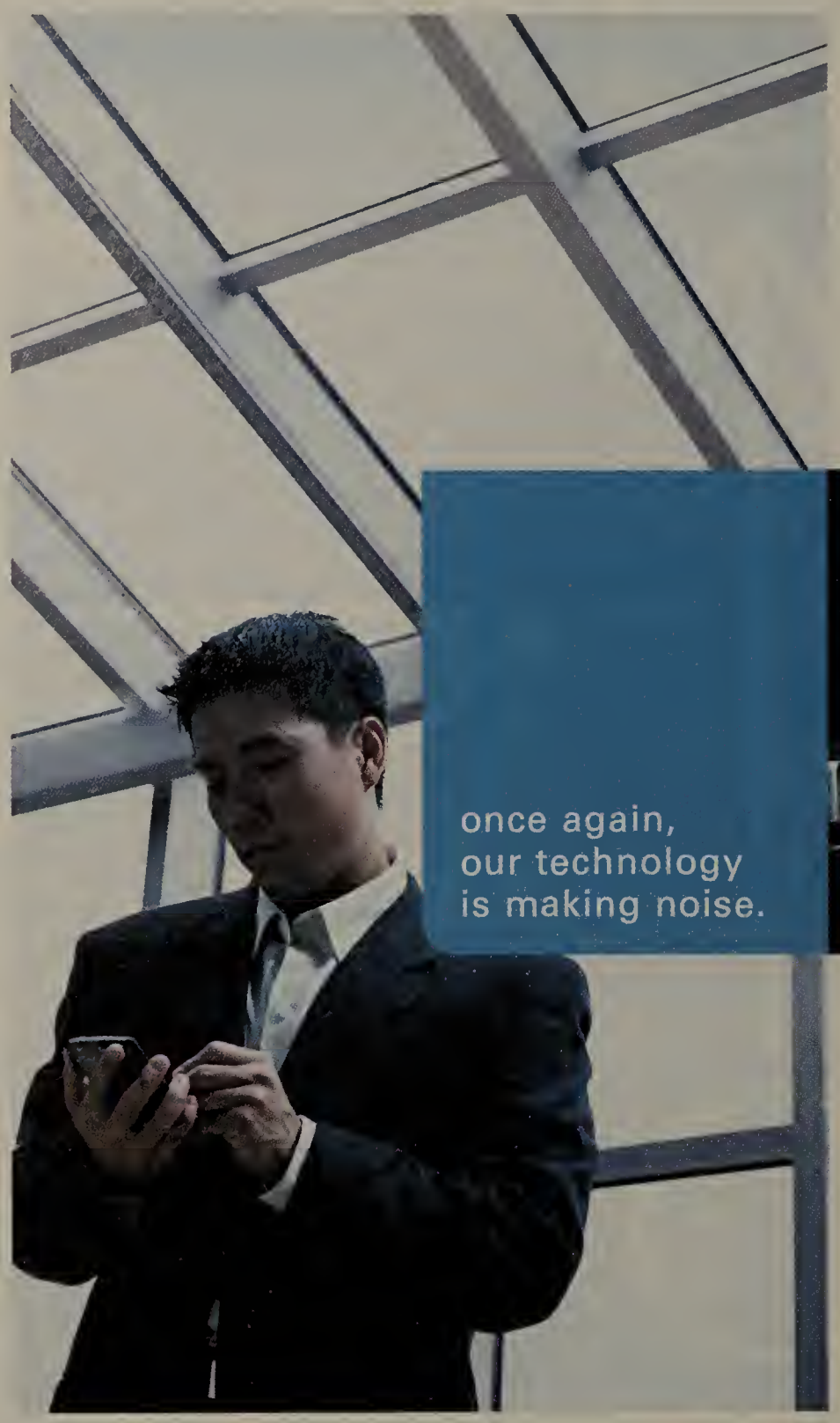
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Net.Worker

■ PRODUCTS, SERVICES AND STRATEGIES FOR TYING TELEWORKERS TO THE ENTERPRISE

Beating the big city blues

Seattle dental insurance provider turns to rural community for inexpensive space, qualified workers.

■ BY JEFF ZBAR

For Washington Dental Service, the cost of growth was like a sick tooth: Painful, and only getting worse.

The Seattle dental insurance and benefits provider had outgrown its company headquarters, but executives balked at the high rents of new space nearby. Finding new employees in a tight job market was a challenge, too. Newspaper ads for customer service and data entry staff produced a trickle of responses from candidates demanding high, metro-area salaries.

"We had to find a solution, but it didn't seem to be in Seattle," says CIO Craig Gowdey.

The firm developed a second facility in a rural location, where the cost of office space and salaries was lower. Remote work wasn't a new concept to Washington Dental executives. In 1994, the firm worked with the Washington State University (WSU) Cooperative Extension Service Energy Program to launch its telework program, and today 25 employees work from home one or two days per week.

For this new project, Washington Dental turned again to WSU, this time to its Rural Telework Project for help. Funded by a U.S. Department of Agriculture grant since 2000, the project "plays matchmaker between rural communities hoping to diversify their economies, and employers they want to attract," says Dee Christensen, WSU's manager of rural telework projects.

"We're looking for ways to strengthen agricultural communities and telecommunucations," she says. "The communities become more diversified."

Meanwhile, the rural community of Colville, Washington's Tri-County Economic Development District had received a federal grant and was converting a retail site into an office hoping to attract a new business to move in, says Marty Wold, executive director with TEDD.

Today, Washington Dental Service has a 60-seat remote office in Colville, a farming and timber community of 5,000. Rent is $9 per square foot compared with Seattle's $22. IT talent turned out to be plentiful, and salaries were 20% less than in Seattle. And the company has room to grow. The firm expects the move will save it $1 million over the next three years.

A perfect match

WSU works with communities based on three criteria: the presence of a solid telecom infrastructure; strong community leadership looking to diversify its economy; and a remote location that would inhibit employers from reconsidering their decisions and pulling the employees back into the corporate office later.

"We didn't want managers saying, 'Drive into the office' if it wasn't working," Christensen says.

WSU also selects communities that receive overnight package service, and have technology vendors or consultants nearby in case the tenant needed service. "We even ask about golf courses," she says. "It just turns out there is a fabulous course near [Colville]."

Colville had all the right stuff. It's 350 miles northeast of Seattle, across the Cascade Mountain range — a distance covered by a one-hour flight and one-hour drive (or a six-hour drive). The town had worked with Qwest and CenturyTel to improve its network, installing a second set of telephone circuits to create redundancy for the call center. TEDD executives had converted an old restaurant into an office, and ran phone service and broadband connections into the building, and outfitted it with 60 desks.

When Washington Dental selected the site, it installed 60 workstations, and brought in Nortel and Qwest to install the switch so the office would have four-digit dialing between Seattle and Colville. When Tier-1 customer service calls come into Seattle, they're routed to Colville.

A warm reception

Even though the population is small — 5,000 in Colville and 35,000 in the tri-county area, Washington Dental received more than 400 responses for 29 customer service and data-entry posts. Residents were eager for new opportunities; unemployment was at 11%, mostly because of declines in the region's farming, timber and mining industries.

Because so many applicants lacked computer or customer service experience, executives selected candidates with the right attitude and worked with WSU to develop a comprehensive training program. WSU taught trainees basic keyboarding and customer service basics, and Washington Dental managers taught them how to use the company's software and phone system.

Training went smoother than expected, says Tal Mashat, the Colville center manager. "But if you put a great trainer in with people who are willing to learn, the learning curve is minimal," he says. "These people amazed us."

Because Washington Dental had never supported a team of remote workers in an outside facility, it needed to rethink its management processes. "We have work flowing through both our Seattle and Colville locations, so we had to create compatible business practices," Gowdey says. "It forced us to create systems built around how you manage a remote group."

Mashat was selected as manager only after the company determined he was qualified to manage a remote, rural site. Although a Los Angeles native, Mashat had lived in Idaho and rural Washington. The firm also valued his network skills. Once in place, Mashat joined the local chamber of commerce, met with the community, and has waved the company flag to establish "a good face in the community and be the place people want to work," Gowdey says.

While the Colville project — kicked off officially in February, is off to a great start — 31 seats in the office remain vacant, giving the firm ample room to grow. Moreover, executives envision the facility will serve a broader role in the future. By year-end, the firm expects to hire an on-site network administrator, and plans include turning the Colville facility into the company's disaster-recovery site, hosting Washington Dental's Sun Guard failover server. That alone could save the company 20% over paying a hosting service.

"More and more we're going to see workforces in rural American that can fill a niche for employers," Christensen says. "One of the real strengths of the rural community is its work ethic. And the people are just pretty darn nice." ■

Room to grow

Steps to take for setting up a rural office:

1. **Find the right site.** Seek rural communities that are organized and energetic. Those once dependent on agriculture might be looking for new business to fill the void and get residents back to work. Look to an intermediary such as Washington State University Extension Service, which hooked Washington Dental up with Colville's Tri-County Economic Development District to select the location, and recruit and screen employees.
2. **Define your needs.** First define the purpose the site will serve, then find the candidate to match the requirements. If you're planning a call or data-processing center, for example, your software and technology needs will be different than they would be if you were planning to house traveling sales representatives.
3. **Don't skimp on technology.** Without robust network connections, a rural site will become isolated, unproductive and a burden to the company.
4. **Keep one eye on the future.** From site selection to buying phone and network equipment to hiring the right manager, plan for the site's initial launch and for expansion. This will ensure the facility serves the company's needs over time.

Short Takes

■ Wireless LAN infrastructure provider **Proxim** last week completed its $65 million acquisition of **Agere Systems's Orinoco** 802.11 equipment business. The sale vaults Proxim into direct competition with Cisco, and lets Agere focus on its core chip business. The companies signed a three-year agreement by which Agere will provide 802.11 chips, modules and cards to Proxim, a license agreement on Proxim's use of Agere's wireless technology, and a patent cross-license deal that settles patent litigation between the two. Of Orinoco's 200 employees, 150 will join Proxim.

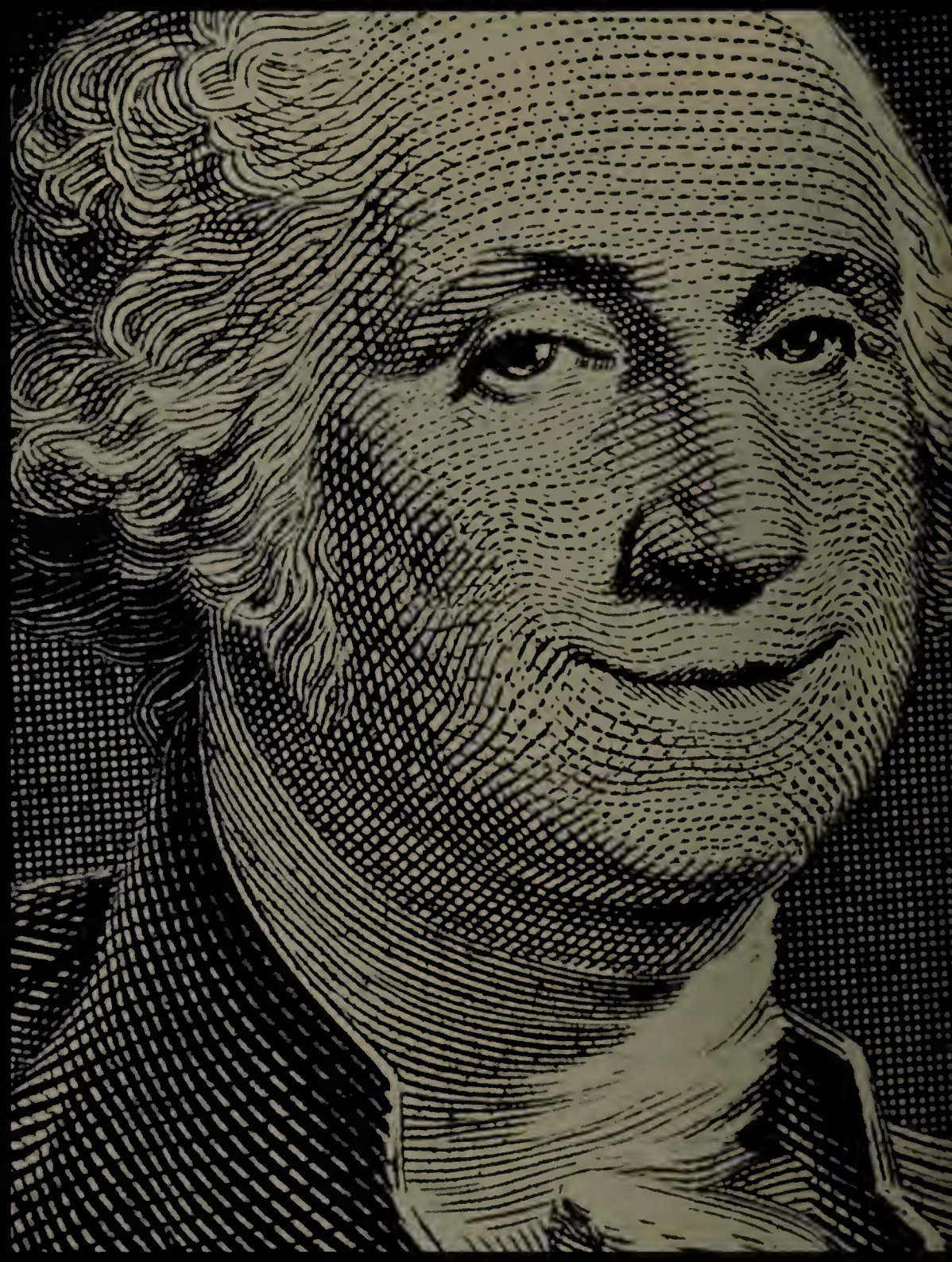
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Wireless technology reshapes retailers

■ BY ANN BEDNARZ

From Prada's Manhattan digs to The Gap in Atlanta, retailers are trying out new wireless technology that experts say will help improve inventory accuracy and fight fraud.

Radio frequency identification (RFID) technology uses radio waves to transfer data between a reader device and an item, such as clothing or a shipping container. The technology powers myriad applications, from luggage tagging at airports to highway toll collections.

Exxon Mobil uses RFID technology in its Speedpass payment system. Customers wave a small transponder in front of a sensor on a gas pump, debiting their account. Low-frequency RFID applications range from 3 KHz to 300 KHz; Speedpass operates at 134 KHz. High-frequency RFID systems operate between 3 MHz and 30 MHz — many at 13.56 MHz, a frequency reserved for low-power industrial applications.

Today, retailers are looking to use RFID to keep tabs on their inventory — to find out what products are on store shelves, what's available in the storeroom, and what's en route from the distribution center or from suppliers.

RFID is a descendent of wireless technology used during World War II when the British mounted transponders to their aircraft so they could tell via radar if an approaching plane was one of their own.

In retail scenarios, an RFID system consists of an antenna and transceiver — which often are contained in a single reader device — and a transponder. The reader can vary in format from a simple handheld scanner to a stationary tunnel-like device that scans boxes as they pass along a conveyer belt. The reader transmits a signal over radio frequency waves to activate a transponder embedded in an item tag. When activated, the tag sends data back to the reader.

For retailers, RFID tags are a bar-code alternative. The tags contain miniature chips that store information about the item to which they are affixed — blue jeans or a T-shirt, for example.

Unlike bar codes, RFID tags do not require a reader to come in direct contact with an item, nor do they require a line of

See Retail, page 24

Top to bottom wireless

RFID tags can transmit item data, including manufacturing and post-purchase warranty information, without requiring a line of sight between a reader device and the tags.



Short Takes

■ A **vulnerability** has been discovered in **Symantec firewall products** that would let a knowledgeable attacker hijack any connection to Symantec's Raptor, Enterprise Firewall and VelociRaptor firewall products, potentially gaining unauthorized access to internal corporate resources. Security services firm Ubizen contacted Symantec after it discovered the vulnerability on July 3. Both companies agreed to refrain from publicizing the problem until Symantec had prepared a software fix. Symantec has made the fix available at **http://securityresponse.symantec.com/.**

■ Network management start-up **Eclyptic** recently announced that Austin Ventures, a venture capital firm in Austin, Texas, funded the company with $5 million. Eclyptic is said to be developing performance and security management software. It also appointed Joe Corso as president and CEO. Corso was a former Austin Ventures entrepreneur in residence. Other Austin Ventures staffers — Venture Partner Mike Bennett and Principal Mike Rovner — will sit on Eclyptic's board of directors. Bennett will serve as chairman. **www.eclyptic.com**

Ecora putting foot in patch mgmt.

■ BY JOHN FONTANA

PORTSMOUTH, N.H. — With companies working overtime these days to solve their patch management headaches and shore up security on their networks, Ecora has introduced its first patch management tool, PatchMeister, which it is offering free to network executives.

A professional version, which will not be free, will ship later this year and offer additional features, such as automatic installation.

PatchMeister discovers Windows-based domains and the desktops and servers in those domains, and scans for patch installations. The tool then compares them against the latest patches available from Microsoft for Windows NT, 2000 and XP. It also scans SQL Server, Internet Explorer and Internet Information Server.

The tool runs from a central console and provides views into patch installation by machine, by patch or by host. The software provides a link to Microsoft's MS Secure database for the latest patches and information.

Glitch fixer

Microsoft has issued 40 hotfix and security bulletins so far this year. Last year's total was 60. In 2000, the company released 100.

"I can scan any computer from my machine and get a report on what patches are missing, and I can click a link on the report page to go to the Microsoft site and see if the patch or hotfix is critical and find out more information," says Kemi Le, network services manager for Cizer Software, which develops Web-based reporting tools. Le says she has been managing patches manually and that free tools available from Microsoft such as HFNetChk and Microsoft Baseline Security Analyzer are slower and harder to use than PatchMeister.

"I'm saving five to six hours on my monthly patch checks and my accuracy is better," Le says.

Ecora, known for its configuration management tools Configuration Reporter and Configuration Auditor, is jumping into a patch management market with Aelita, BigFix, ConfigureSoft, Loudcloud, Patchlink, St. Bernard Software, Shavlik Technologies and others.

Users will not have to install Ecora's configuration tools to use its patch software. Ecora will offer a professional edition of PatchMeister by year-end. The tool will offer automatic installation and update features and will add support for Outlook and NetMeeting, along with non-Microsoft applications. Ecora also will add scanning capabilities for Cisco, Sun, Hewlett-Packard and other vendors.

"There are the same problems with those platforms in terms of managing patches," says Alex Bakman, CEO of Ecora. "Microsoft is at the top of the enterprise list, but the same requirements are needed for these others platforms."

PatchMeister is available at www.ecora.com. Pricing for the professional version has not been set. ■

'NET INSIDER

Scott Bradner



Can the DMCA hide SSNs?

It's been an interesting time of late to be in the Ivy League as long as you are not at Princeton or Yale, and it's been a depressing time if you are remotely interested in Internet security.

For being the elite of American higher education, officials at Princeton and Yale sure showed recently how the technically and procedurally clueless do things.

Yale put up a Web site to let prospective students find out if they have been admitted to the university. That, in itself, was a good thing. It sure beats waiting around for months to see if you get a thick or thin envelope in snail mail.

But in an almost perfect demonstration of poor security, Yale decided to control access by asking for readily available information. All someone needed to know was a name, social security number and a date of birth, and they could find out what Yale thought of an applicant.

Sad to say this is data that can be discovered quite easily by wandering around the Internet. But it's also data that is provided by applicants to other schools. For example, to Princeton.

So if the same person applied to both schools, Princeton officials would have all the information they needed to access the Yale Web site, and, apparently, at least one Princeton official did just that. Both players in this farce, the one that used such stupid "security" and the one that broke the "security," give higher education a bad name.

Then only a few days later Hewlett-Packard decided that hiding security flaws was more important than finding and fixing them and looked around for the biggest stick it could find to drive the point home.

The story, the best that I can figure out from published reports, is that a research group called SnoSoft found some security problems in HP's version of Unix.

SnoSoft started talking with HP about some of these problems this past spring, but then a researcher affiliated with SnoSoft sent a note to a popular bug-reporting list that included a description of a problem and a link to a program to exploit it. This freaked out HP, which proceeded to send a letter to SnoSoft threatening prosecution under the Digital Millennium Copyright Act (the infamous DMCA). You know, the overly broad law that claims to be protecting copyrighted materials. A big stick indeed — penalties of up to $500,000 and five years in jail. (HP has since withdrawn its threat.)

Publishing information about security flaws is a controversial process, but by its actions HP was telling me that it was not particularly interested in computer security. Shooting messengers real dead is not a good way to find out about bugs that the bad guys know about but you do not. HP's actions were indistinguishable from those of an organization that is consciously trying to weaken our defenses against hostile attacks.

But if the DMCA can be used in this way, maybe the U.S. government can sue itself for making Social Security numbers so easy to find out that Yale's tissue paper security could be ripped through.

Disclaimer: Harvard does know how to spell "security," but the above spelling lesson is my own.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sobco.com.

Retail

continued from page 23

sight between reader and tag. Plus, multiple transponders can be read simultaneously. This means that warehouse staff can inventory the contents of a sealed pallet with a single scan, and storeroom staff can tell what's inside a sealed carton without removing each item.

RFID tags also hold more information than a standard Uniform Product Code (UPC) identifier. Whereas a UPC bar code identifies a particular manufacturer's product, such as a style of shoes, an RFID tag potentially can identify a pair of those shoes through a unique item-level serial number. It also can store information about where and when that pair of shoes was manufactured, when it was placed on a store's shelves, and when it was purchased.

Wireless proponents

Proponents say RFID technology eventually will let every company in the supply chain track individual products. For example, as a container arrives at the loading dock of a distribution center and workers scan the pallets, information about the container's arrival immediately can be shared with the suppliers that sent the shipment and retailers who are waiting for their share of the content to arrive.

Today, RFID is most common at the distribution and warehouse stage of the retail supply chain, says Jim Crawford, retail analyst at Forrester Research.

Companies primarily use the technology to identify containers or pallets — as opposed to tagging individual items — which limits the number of RFID tags they need to purchase. But increasingly, retailers are testing its use on the shop floor as well, Crawford says.

Inside stores, readers mounted on display shelves can poll item tags and send inventory data to back-end systems, rather than relying on point-of-sale data or manual counts. When shelf counts get low, the system can alert staff that particular sizes and styles need to be replenished.

Clothing retailer The Gap conducted a three-month RFID pilot late last year in an Atlanta store. Neco Can, director of The Gap's product management office, shared his company's experience at this summer's Retail Systems 2002 conference in Chicago.

"RFID technology works. And if I know where my goods are, I can make better decisions."

Neco Can
Director of The Gap's product management office

"RFID technology works," Can said. It let The Gap identify individual items without physically seeing them. "And if I know where my goods are, I can make much better decisions," Can said.

Can emphasized that RFID could improve data integrity — which is a big issue for retailers. All along the retail supply chain there are opportunities for errors to be introduced as items are manually counted and entered into systems, Can said. "Data accuracy is pretty bad," he said. Less than 85% accuracy is not uncommon; but for its in-store RFID trial, Gap's inventory accuracy levels hit 99.9%, Can said.

Following the pilot, The Gap has shelved its plans for deploying RFID throughout its chain. But Can foresees many opportunities for the technology. For example, a cashier could conduct mass scans at the register to speed up checkout times, Can said. And to combat fraud — particularly among employees — RFID technology would let retailers write sales data to an RFID tag so that if someone tries to return stolen merchandise for cash or credit, the system can alert the cashier, Can said.

RFID roadblocks

Forrester Research's Crawford says RFID technology has the potential to change everything about the way companies manage the supply chain.

But there are obstacles, one of which is price. The cost of transponder tags today ranges from 20 cents for disposable paper labels to several dollars for tags that can be rewritten thousands of times, according to Forrester Research. The Auto-ID Center, a research program at the Massachusetts Institute of Technology, hopes to see prices drop to 5 or 10 cents per tag in the next few years.

A second obstacle is data collection and dissemination.

"RFID requires a whole new category of applications," Crawford says. RFID systems inside a store might poll tags every 5 seconds, but there's no need to pass that massive amount of information to a company's central inventory system, he says. Exception-based software that reports inventory changes at reasonable intervals is more appropriate.

Pilot action

For these reasons, RFID technology is still very much in pilot mode, Crawford says.

"We're still seeing a lot of pilot action, which is typical when companies are rolling out new technology," says Bill Allen, eMarketing manager of Texas Instruments RFID Systems. Texas Instruments offers low-frequency and high-frequency RFID products. Its technology was used in The Gap's pilot and in an RFID rollout this year at Prada's flagship New York store.

Other companies participating in RFID pilots include Auto-ID Center sponsors Wal-Mart Stores, Proctor & Gamble, The Gillette Company, Kraft Foods and Coca-Cola. Minneapolis' Target Corp., too, has said it will test RFID.

Texas Instruments expects full-scale RFID rollouts to pick up, Allen says. British retailer Marks & Spencer ordered 3.5 million tags, which the retailer will embed in reusable plastic trays, dollies and cages used to transport refrigerated fresh foods.

"An order of 3. 5 million tags means they're pretty serious about the technology," Allen says.

As for pricing, Allen says RFID tag prices are less than half what they were five years ago, when Texas Instruments originally came out with RFID products. And the prices continue to drop, little by little, Allen says.

Key to deploying RFID sensibly is finding appropriate applications. "You're not going to stick a 35-cent label on a 75-cent can of beans," Allen says. "It has to be the right application."

Along with Texas Instruments, other vendors with RFID offerings include Matrics, Philips Semiconductors and Symbol Technologies. ■



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WorldCom 'what ifs' spark talk of FCC role

Law unclear on whether government could require that key 'Net backbones be kept running.

■ BY MICHAEL MARTIN

Federal Communications Commission Chairman Michael Powell's recent remarks about the FCC possibly having no power to prevent a WorldCom Internet shutdown caused a minor stir, but observers say the bottom line is that WorldCom is unlikely to pull the plug on its Internet backbone.

However, experts say, Powell's comments do raise a point about whether the government should take steps to ensure that important Internet backbones remain running, even if the companies that own them can't afford to maintain them.

"I don't think Powell was trying to say there was a big possibility of WorldCom shutting down its UUNET backbone," says Thomas Nolle, president of consultancy CIMI Corp. and *Network World* columnist. "What he was trying to say is Internet services don't fall under the same control as telecom services."

Under Section 214 of the Communications Act of 1934, carriers must give 31 days notice before shutting down telecom services. That 31-day period can be extended indefinitely by the FCC.

Internet services can be labeled as information services rather than telecom services. Therefore, it's unclear whether Section 214 could be used to keep an Internet backbone running.



"Our authority under Section 214 is at best unclear and, at worst, does not extend to certain critical services such as the Internet backbone."

Michael Powell, chairman of the FCC, testifying before the Senate Commerce Committee

Powell said there are no signs that WorldCom is about to shut down its Internet backbone, but he warned the Senate Commerce Committee that if WorldCom, or another troubled Internet provider, had to shut down its Internet operation, the FCC might be powerless to prevent it.

"Our authority under Section 214 is at best unclear and at worst, does not extend to certain critical services such as the Internet backbone," Powell said.

He asked Congress to clarify the FCC's ability to prevent a service shutdown under Section 214.

Like Nolle, Lisa Pierce, an analyst with

See WorldCom, page 28

Short Takes

■ Wireless customers of **WorldCom** are being prompted to transfer their business to other U.S. wireless carriers to avoid an interruption in service, the company says. WorldCom previously resold wireless service from U.S. carriers to customers, who will start receiving letters about how to switch their accounts to one of five carriers affiliated with WorldCom: **Verizon Wireless, Cingular Wireless, AT&T Wireless Services, Alltel,** and a fifth carrier not disclosed yet. Customers are being assigned a transitional provider, in most cases the same one that carried their wireless calls under WorldCom's resale programs, WorldCom says. The features and services offered under WorldCom's plans are similar to those offered by the respective carriers, the company says. Depending on the provider, different deadlines will be in place for switching service to a carrier to avoid headaches such as having to change phone numbers.

■ **Progress Telecom,** a provider offering services in the eastern U.S. and South America, unveiled **metropolitan-area Gigabit Ethernet services** last week. Progress will offer Gigabit Ethernet between two points within metropolitan rings in five markets: Atlanta; Miami; Raleigh, N.C.; Tampa, Fla.; and Washington, D.C. The service will be available in 1M bit/sec increments. Progress operates an OC-192 backbone with 8,400 route miles and 165 points of presence. The company's target market is other service providers and large companies.

Web services project targets fiscal data

Microsoft, PricewaterhouseCoopers and Nasdaq team up on .Net initiative.

■ BY MATT BERGER

Microsoft last week launched a .Net Web service in association with PricewaterhouseCoopers and Nasdaq that will let investors and analysts access financial data over the Internet and analyze that data using Microsoft Office.

The Web service uses a data format called Extensible Business Reporting Language (XBRL), which is being developed as a standard way to represent data in business and financial reports. XBRL is a schema based on XML and was designed with the intent of eliminating paper financial reports and replacing them with digital reports that can be delivered over the Internet.

The trio launched the Web service as a pilot program. It is based on Microsoft's .Net technology and lets a user access quarterly and annual reports, also known as 10K and 10Q reports, of 20 semiconductor companies and Microsoft's financial reports. The financial data then can be displayed in an Excel document using Excel 2000, or Excel 2002, the version of the software included in Office XP.

PricewaterhouseCoopers was responsible for putting the financial reports in XBRL format. Nasdaq is hosting the data on its Web site at www.nasdaq.com/xbrl.

To access the data, Microsoft designed the .Net Web service called Excel Investor Assistant that will pull the XBRL data from the Web and deliver it to an Excel document.

"It will allow an analyst to compare specific data with similar data from quarters past, or from other companies," says David Jaffe, lead product manager for Office at Microsoft.

Through the .Net Web service, users can automatically analyze financial data rather than having to input data into a spreadsheet. For example, a user could automatically compare the total revenue for all 20 semiconductor companies by quarter and have that comparison displayed in an Excel document.

Microsoft, Nasdaq and PricewaterhouseCoopers are members of the consortium that is developing and maintaining XBRL. The consortium has attracted nearly 170 members, each of which deals with financial data.

One benefit of a standard data type for delivering business reporting data over the Internet is that "there's not as much distortion of company reports through third parties," Jaffe says. "The information is exactly how the company intended it to be."

However, there have yet to be any major applications developed that make use of XBRL, he says. The pilot program was launched to show what companies could do with the standard data type.

Berger is a correspondent for IDG News Service's San Francisco bureau.



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EYE ON THE CARRIERS

Johna Till Johnson



Back-up strategies for a world without WorldCom

Many thanks to all who wrote regarding my last column. As one reader put it, "Not only did [former WorldCom CEO Bernie] Ebbers and the few rich boys and girls at the top ruin an American success story ... they also ruined a lot of careers and left a lot of ... employees out to dry."

That about says it all.

But how about you loyal (and not-so-loyal) MCI, UUNET and WorldCom customers out there? What steps should you be taking to protect yourself against the fallout?

First, the good news. Contrary to popular belief, filing Chapter 11 typically doesn't mean that a company goes out of business.

What Chapter 11 does provide is an excellent mechanism for shedding the load of debt that the company has accrued. While it's far too simplistic to call Chapter 11 a "get out of jail free" card, in some respects it's exactly that. Under the court's guidance, the company divests itself of unprofitable business units, manages limited payments to creditors, and ultimately gets back on its feet.

In many respects, Chapter 11 is a wonderful thing. It's one of the tremendous things about how we do business in the U.S.

But it's not all roses and happiness. From a customer's standpoint, the problem with Chapter 11 is its inherent uncertainty and riskiness, which could adversely affect customer service.

At the very least, employees of a Chapter 11 company tend to be somewhat less than 100% focused on their daily jobs. Also, there's a good chance that many top employees will seize the opportunity to jump ship, further disrupting engineering, marketing and sales operations. Finally a Chapter 11 company is a great take-over target — for an entity that might choose to make further changes.

A customer should begin now to research back-up opportunities. Don't make the leap yet (you may be legally precluded from doing so), but begin compiling detailed information about options and alternatives.

Here's a starting list:

- For domestic frame relay, ATM and other data services, Sprint and AT&T are good candidates, as they are for voice. Investigate your local service provider's alternatives for voice (local and national) and wireless.
- For international data services, look at the above, plus Infonet, Equant and the applicable post, telegram and telephone administrations, along with well-funded competitive players such as Colt (in Europe).
- For global dial-up VPN services (the former UUNET/Compuserve), look at AT&T, Infonet and Equant. For specialty services such as extranets, also consider players such as Savvis Communications and Radianz. Finally, cable companies may be surprisingly good fits, particularly for remote workers.

No matter which company you're investigating, do your financial homework. Check for capitalization, cash flow and profitability, not just an absence of headlines about the CFO. And keep your options open — it's volatile out there.

Johnson is senior vice president and CTO for Greenwich Technology Partners, a network consulting and engineering firm. She can be reached at johna@greenwichtech.com.

WorldCom

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consultancy Giga Information Group, says there's no reason for WorldCom customers to worry about their Internet service. John Sidgmore, WorldCom's CEO, has said the company plans to emerge from bankruptcy and its UUNET Internet backbone would be key to any re-emergence, she says.

Nevertheless, "the lack of regulation on the Internet is a legitimate concern," Pierce says.

For example, Pierce says she wonders what would happen to converged voice/data offerings in the event of a shutdown. Would they be protected as a telecom service, or would they fall outside the FCC's powers? The answer isn't clear, she says.

Nolle says the government needs to make changes to keep telecom legislation on pace with changing technology. But nothing is likely to happen until after the elections in November, he says.

"There would be too many special-interest accommodations until the new Congress is in place," he says.

Until new legislation gets passed, the FCC might sit on the fence about considering the Internet a telecom or information service, Nolle says. If the FCC is able to argue that the Internet is an essential telecom service, it might be able to keep the Internet backbones of financially unstable providers up and running.

Sitting on the fence has its consequences though, Nolle says. Earlier this year, the FCC issued a Notice of Proposed Rulemaking, seeking to classify DSL as an information rather than a telecom service.

The FCC's thinking was that this would encourage incumbent local exchange carriers, such as the regional Bell operating companies, to invest in more DSL technology. Currently the incumbent carriers say they aren't investing a lot in DSL networks because they are forced to share those networks with competitive providers.

If DSL were labeled an information service, it might not fall under the regulations of the Telecommunications Act of 1996 and might not be subject to the competition requirements contained in the act.

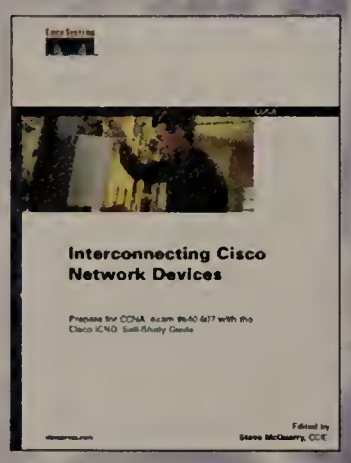
But classifying DSL as an information service might hurt the FCC's chances of keeping Internet services up and running if a service provider shut down its Internet backbone.

"Powell might have a better chance of enforcing a service continuance if he doesn't issue a rule-making," Nolle says. "But if he doesn't issue a rule-making, DSL will continue to be put on hold." ■

Cisco Systems

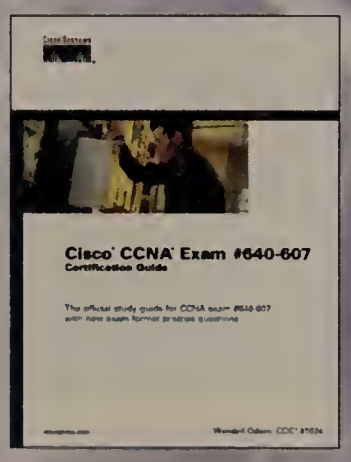
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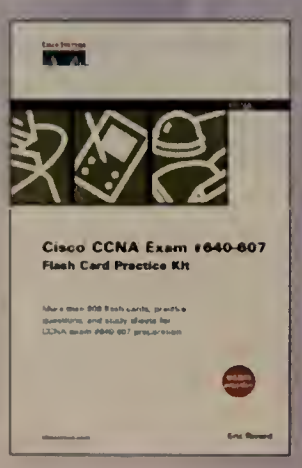
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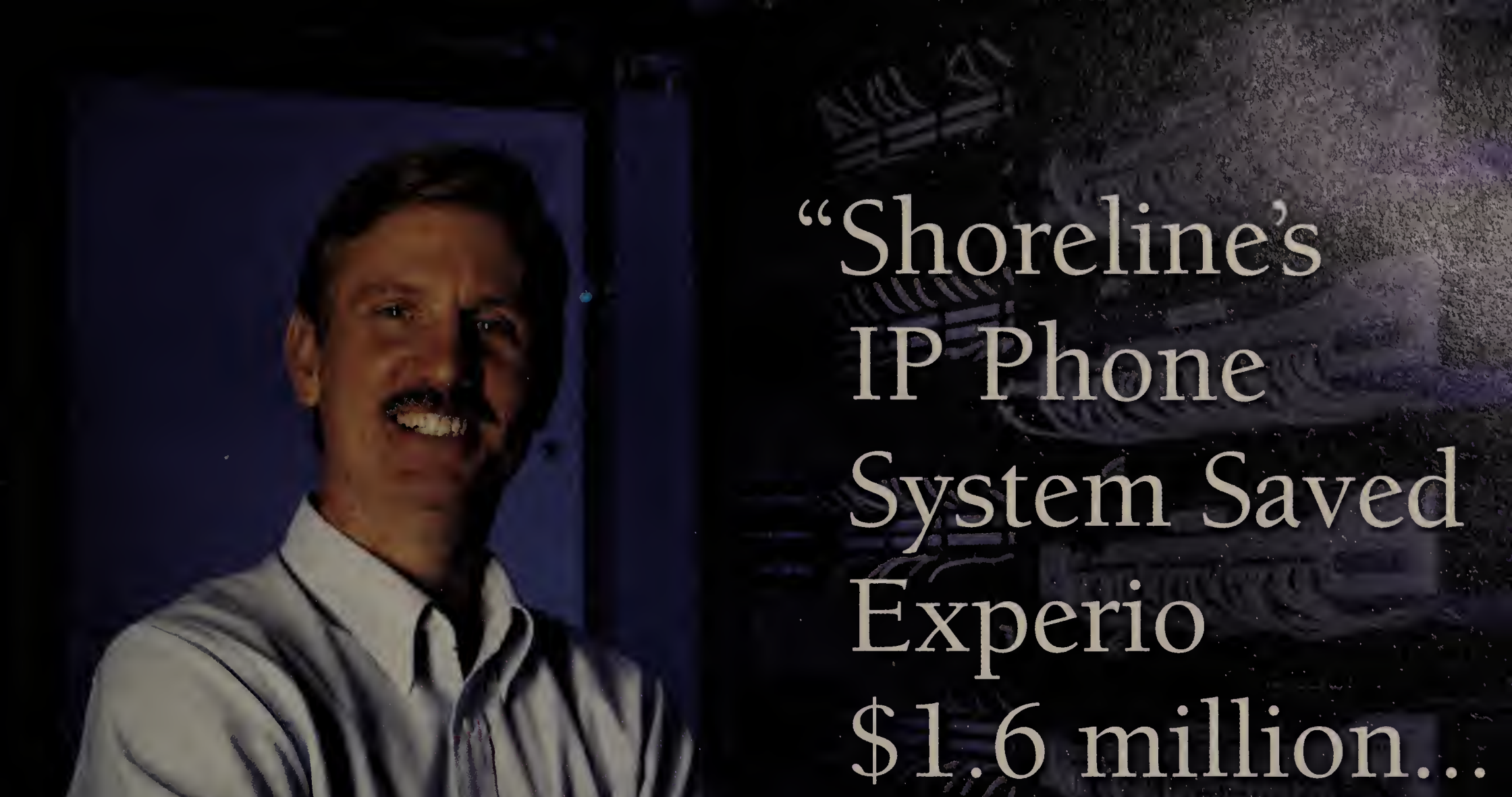


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Total Per Site Aquisition Costs	$30,000	$61,700	$31,700
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Annual Costs			
Management	$39,600	$72,000	$32,000
Maintenance (Based on 10.1%)	$48,480	$129,280	$80,800
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Special Focus

ASPs: Capitalizing on flexibility, service expertise, not just software.

Changing demands force ASPs to adapt

■ BY JENNIFER MEARS

About a year and a half ago, marketing, travel and hospitality conglomerate Carlson Companies decided it was time to implement an enterprisewide human resources application. It chose PeopleSoft's HR package, but wasn't interested in deploying the application itself.

The company recently had struggled through an Oracle Financials implementation and decided that it needed outside expertise to make the PeopleSoft deployment run smoother. Thoughts turned to application service providers (ASP), which promised quick deployments and few headaches.

But it was around that time that the ASP market took a serious turn for the worse.

"We were going to go ahead and follow the ASP model," says Joe Ziglinski, project manager at Carlson in Minneapolis. "But as the market started to collapse around us, we didn't want to take the risk of having all that hardware at some third-party site and then have something happen to our partner and there we sit with nothing."

So Carlson found an ASP that was willing to compromise. It worked out a deal with Corio and became one of the first customers to take advantage of the ASP's application management expertise on its own corporate premises. Corio rolled out its OnSite service in March.

This type of service, in which ASPs remotely manage applications running on the customer premises so that businesses can retain investments in infrastructure, is one of a range of new and flexible offerings that business customers will find from companies that host and manage enterprise applications. Other new offerings include deeper access into remotely hosted systems through customer portals, disaster-recovery services and transition-focused options that let customers move from a fully hosted situation to remote application management in the corporate data center and vice versa.

It's a far stretch from the ASP market's beginnings, when the focus was on managing individual applications for multiple customers. But it's a necessary one as ASPs evolve from serving their original dot-com customers to serving larger companies with established IT departments and infrastructure investments.

"Companies like Corio and USinternetworking whose value-add was not software but was the services started to look at how to take their services expertise and build that out," says Amy Mizoras, an analyst at IDC. "The natural evolution of that was to start to get into some of the application management services that would put them up against an EDS or an IBM."

The competitive landscape has changed during the past 18 months for ASPs that have watched many peers file for bankruptcy protection or fail outright. Today, outsourcers such as EDS and IBM are stabilizing the shaky market by rolling out ASP-like services.

"The traditional outsourcing model and the ASP model are becoming really blurred," says Laurie McCabe, a vice president at Summit Strategies. "Just as you have ASPs now managing things on the customer premises and moving toward the more traditional outsourcing role, on the flip side you have traditional outsourcers like IBM Global Services and EDS that are providing more of a hosted, self-service, software-as-a-service offering."

Scott Beckman, a partner in PricewaterhouseCoopers' Outsourcing group, says in addition to flexibility, ASPs are starting to provide better integration services for connectivity into legacy systems. Vertical industry expertise is another growing focus.

Integration capabilities and industry expertise were the main reasons EMI Industries, which manufactures custom-built products for the food retailing industry, chose ASP Surebridge for its Siebel 7 implementation.

"Surebridge tried to understand our business and our concerns," says Dave Hahmann, vice president of EMI in Tampa, Fla. "They understood that our focus wasn't software, it was manufacturing."

Surebridge has remotely managed the Siebel implementation on EMI's premises since June, and Hahmann is considering moving the application into a fully hosted situation. "This is a test for Surebridge," he says.

That's the attraction of remote application management: Customers can get a taste of the ASP's expertise without losing total control of their applications. In Carlson's case, Corio manages the database and application, connecting through a VPN for remote monitoring and maintenance. Carlson handles the operating system on down.

"For large enterprises such as ours, this is probably the best of both worlds," Ziglinski says. "We can take advantage of their core competency, which is how they manage the application and the expertise they have around building the application, and we can do what we do well, which is just provide the infrastructure and have that bit of control and comfort."

Nearly all ASPs offer some type of remote application management. USinternetworking introduced USiRemote in February. AppShop has offered remote application management for more than a year and services about 10% of its customers that way, says Prashanth Prahlad, president of the ASP, which focuses strictly on Oracle's e-business suite of applications. IBM introduced Services Anywhere in June.

For companies that prefer to go the traditional route, most ASPs are providing more access into their hosted systems through portals that provide real-time information about system performance, problem resolution and adherence to service-level agreements. Some allow customers to add and delete users. The portals also streamline service for ASPs by empowering customers with self-service capabilities, such as submitting trouble tickets automatically, reducing calls to help desks.

"The customer portals or dashboards are just another way that service-centric ASPs can offer a product or service that helps IT managers do their jobs better," IDC's Mizoras says. "It makes sense for IT to outsource those projects that maybe aren't worth having internal people working on, but at the same time IT managers need to be able to understand how systems are performing."

Customers should watch how the ASPs deliver on their new offerings. With the flexibility available, there is more opportunity to find a service that meets their needs. While many ASPs offering remote services hope customers eventually will transition into a fully hosted offering, some also provide service for the reverse. For example, Corio's Transition option lets businesses use a traditional ASP service while it prepares for an in-house deployment.

The issue in the ASP market is to provide services in whatever manner a customer needs, says Harris Miller, president of the Information Technology Association of America.

"A lot of the earlier expectations about what would drive the ASP market have changed somewhat, and it's time to re-evaluate exactly what is the value proposition that is most appealing to customers," he says. "It used to be the cost issue — as someone said, it became the battle of the spreadsheets."

"Ultimately that wasn't enough of a value proposition — now the emphasis is not to forget about the value of cost savings, but also to focus on the complexity for customers of dealing with software products and the ability of ASPs to deliver an easier solution," he says. ■

ASPs adapting

ASPs are offering more flexible services to meet customer demands. A few examples:

AppShop

- Remote application management.
- Customer portal, showing real-time system performance.
- Increased focus on vertical industries such as high tech, retail, financial services.

Corio

- Three service delivery models: Corio Full Service, traditional ASP model; Corio Transition, temporary full service support while customer prepares for in-house deployment; and Corio OnSite, remote application management on customer premise.
- ISRVCE, technology platform that integrates functions such as billing, service requests, workflow and SLA monitoring to give users a single view into how their applications are performing.

Surebridge

- Remote application management.
- ClientBridge, customer portal that provides a real-time view into billing information, system availability and work request status.
- Increased focus on integration with back-end systems and vertical industries such as health care, manufacturing and publishing and media.

USinternetworking

- USiRemote, remote application management.
- Partners with SunGard to provide disaster-recovery services.
- Reducing number of applications supported to heighten focus.

The Edge

■ SERVICE PROVIDER DEVELOPMENTS AT THE JUNCTURE BETWEEN THE ENTERPRISE AND THE NEW PUBLIC NETWORK

Ciena to upgrade SONET software

■ BY TIM GREENE

LINTHICUM, MD. — Ciena later this year plans to roll out software upgrades for its metropolitan optical gear designed to let carriers offer transparent LAN services across metropolitan-area networks.

The enhancements will include support for Ethernet multicasting in Ciena's MetroDirector switch and Online metropolitan optical transport platforms. The additions could result in providers offering corporations services such as Ethernet VPNs, whereby packet data is packed into TDM SONET time slots to reduce the amount of unused bandwidth, says Dave Dunphy, principal optical analyst with Current Analysis.

Other vendors, such as Lucent and Cisco, offer their own proprietary versions of this capability. Standards bodies are working on a standard for Ethernet-over-SONET, Dunphy says.

Ciena's gear supports what the company refers to as "Ethernet tunneling" — dropping Ethernet packets into a SONET time slot and carrying it from point to point. In this case, SONET is used as transport without performing any packet-level switching.

This capability is said to enable Ethernet private-line services.

With the software upgrade, Ciena's metropolitan optical gear will support packet switching so providers can pack more data into each standard SONET time slot. The Layer 2 switching will take place as a customer's Ethernet feed enters the service provider's network.

This switching capability would support point-to-multipoint traffic, and Ethernet add-drop capabilities that will make more efficient use of SONET rings, Ciena says.

The add-drop capability would let multiple users share the same SONET bandwidth. It would appear to the end user as if it were a private connection, but instead would be carried by shared transmission bandwidth.

For example, two customers with four sites each on the same SONET ring could use the same bandwidth, and the switching at each node would separate the two customers' Ethernet streams based on media access control address or virtual LAN tag. The Ethernet packets would all be mapped into the same SONET time slot.

Each node would inspect the traffic and traffic destined for that nod would be dropped off there. The rest would be placed back on the fiber. New traffic could be added from the node at the same time.

Customers would have all their nodes connected on a virtual LAN. They would be unaware that they are sharing the same SONET time slots, Ciena says.

"If you are an established service provider sitting on a pile of SONET equipment, you will want to offer Ethernet without having to build a separate overlay network," Dunphy says.

Using this SONET-packing technology overcomes some of SONET's inefficiencies and retains its strengths, he says.

"If you want SONET reliability, one way to get it is to continue using SONET," he says.

Ciena also plans to add provisioning software that will let providers set up optical links by indicating the endpoints of the links on a graphical interface. This is intended to reduce the time and expense required to set up new circuits, Ciena says.

Ciena: www.ciena.com

Optical decline

The worldwide optical transport market has peaked for the foreseeable future, Dell'Oro Group says.

Numbers (in billions)



Short Takes

■ The **switch fabric market** is expected to experience a **compound annual growth rate of 141%** from 2001 to 2006, according to Cahners In-Stat/MDR. The switch fabric market's potential is due to its versatility, the market research firm states. Switch fabrics can be sold into many different target markets and as a result — even though early money-making opportunities will be firmly within the router and switch markets — by 2006, significant opportunities will be available in at least 13 target markets, In-Stat/ MDR predicts. High-end Gigabit Ethernet switches are a strong market initially, but by 2006, the other main markets will be 10G bit/sec Ethernet switches and core routers, In-Stat/ MDR says.

■ **Cisco** last week posted fourth-quarter earnings **2 cents per share better than Wall Street estimates**, on revenue slightly below expectations. Net sales were $4.8 billion, 12% better than the like period a year ago but flat with the third quarter of fiscal 2002. Analysts were expecting sales of $4.9 billion this quarter. Pro-forma net income was $1.0 billion, or 14 cents per share, which bested Wall Street expectations of 12 cents per share. For the same period a year ago, Cisco posted pro-forma net income of $163 million, or 2 cents per share, and $838 million, or 11 cents per share, for the third quarter of fiscal 2002. Net sales for fiscal 2002 were $18.9 billion, compared with $22.3 billion for fiscal 2001, a decrease of 15%. Pro-forma net income for fiscal 2002 was $2.9 billion, or 39 cents per share, compared with pro-forma net income of $3.1 billion, or 41 cents per share, for fiscal 2001.

Bucking the down trend

Funding for Internet Photonics exceeds aspirations.

■ BY JIM DUFFY

MARLBOROUGH, MASS. — Internet Photonics recently announced the closing of its third round of venture financing — $31 million — from two new investors and existing participants.

The new investors include ComVentures, which led the round, and TeleSoft Partners. Previous investors participating in the third round included Sprout Group and New Venture Partners.

Internet Photonics is an anomaly among start-up companies. Many are going out of business because they can't generate revenue from service provider customers that have sharply curtailed capital spending, take as long as two years to trial a product and are skittish about purchasing from unestablished companies.

The company has now raised $63 million since its October 2000 inception. The new funding will be used for sales, marketing and customer support activities. The company is gearing up for near-term customer shipments of its LightStack and LightHandler optical Ethernet multiplexers to incumbent local exchange carriers (ILEC) and multiple system operators (MSO).

Internet Photonics is taking revenue from one MSO, and has trials under way with six of the top seven ILECs and interexchange carriers, says Gary Southwell, vice president of marketing. Three of those carriers have LightStack and LightHandler in certification trials, which amounts to the "home stretch" toward purchase and deployment.

The company expects to become cash-flow positive next year.

Another unusual twist to the company's third round: Internet Photonics attracted two new investors and raised more than the $20 million to $25 million it was seeking. Southwell attributes the newfound wealth to a revenue-generating customer and positive feedback from those companies that are using the LightStack and LightHandler products on a trial basis.

LightStack and LightHandler multiplex multiple Gigabit Ethernet streams into a 10G bit/sec wavelength. It combines Ethernet multiplexing with dense wave division multiplexing transport capabilities of farther than 50 miles with amplifiers, Southwell says. ■



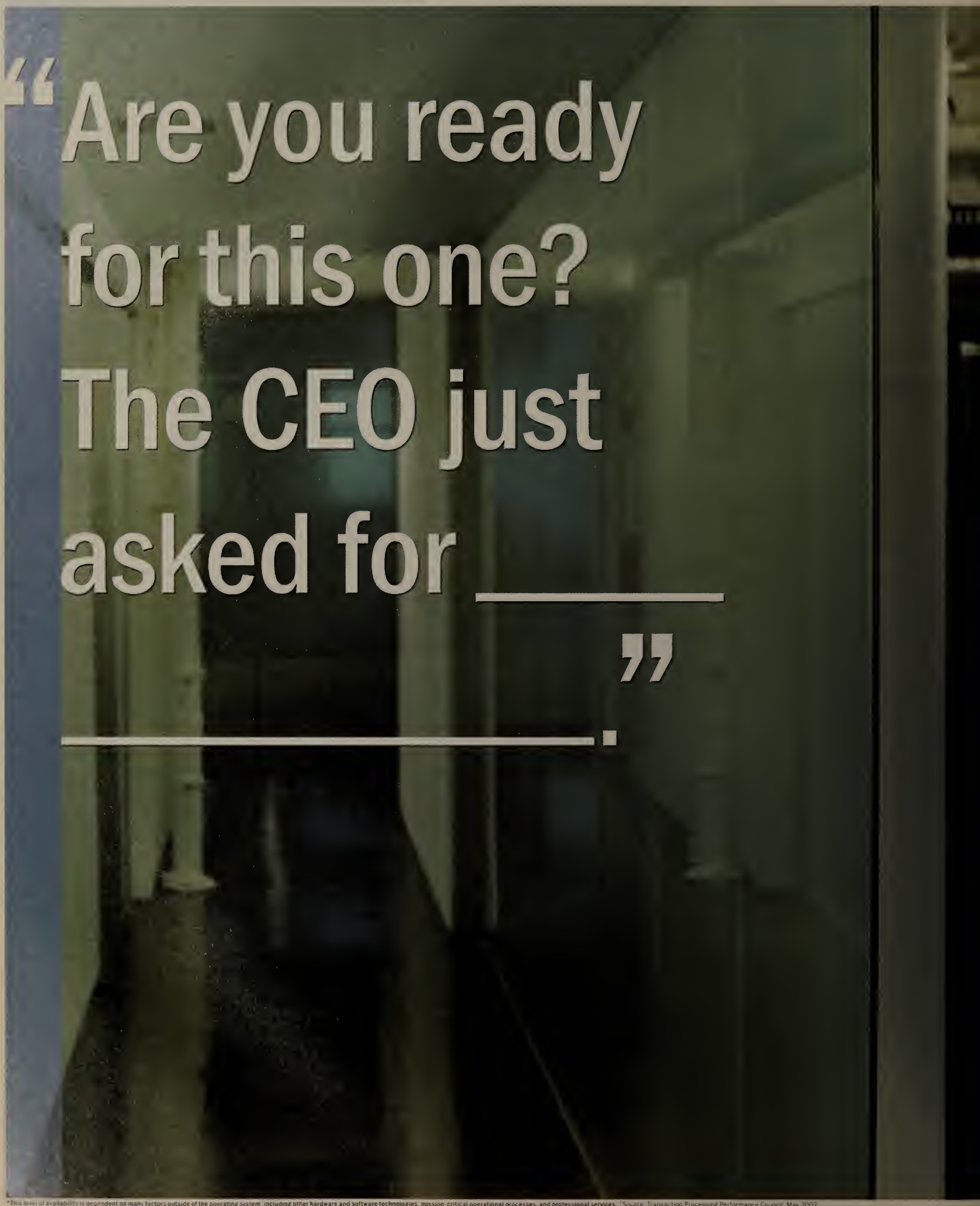
More online!

Take a look at Internet Photonics' products and the technologies they run on. **DocFinder: 1728**



View from The Edge

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*This level of availability is dependent on many factors outside of the operating system, including other hardware and software technologies, mission-critical operational processes, and professional services. †Source: Transaction Processing Performance Council, May 2002

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Technology Update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

SIP is a key part in multimedia sessions

■ BY IAN GROBEL

Session Initiation Protocol is an application-level control protocol for setting up, changing and terminating multimedia sessions between participants on IP data networks.

SIP can enable a range of services, such as Internet telephony, multimedia conferencing, registration and redirection services, and simplify connecting to VPNs.

As its name implies, SIP is responsible for session signaling, a necessary exchange of messages to establish a communication session, be it voice, video or multimedia. SIP traces its roots to several Internet Engineering Task Force (IETF) initiatives, and is tightly linked to Web and e-mail technologies and standards.

SIP requires the use of user datagram protocol (UDP) for performance reasons, and TCP is optional. Given the unreliable nature of UDP, SIP contains its own retransmission mechanisms, including a three-way exchange between nodes for the purpose of establishing sessions.

SIP is used to invite participants to a session, while the Session Description Protocol (SDP)-encoded body of the SIP message contains information about what media types the parties can and will use. Once this information is exchanged and acknowledged, all participants are aware of the participants' IP addresses, available bandwidth and media type. Then, data transmission begins using an appropriate transport protocol. Throughout the session, participants can make updates (indicating a new set of media types, addition of new parties to the session or other changes), by sending additional SIP messages.

Destinations in SIP are represented with uniform resource indicators (URI), which have the same format as e-mail addresses. This implies the use of DNS to map host and domain names to IP addresses. Support for DNS is a key aspect of the integration of SIP with Web- and mail-enabled technologies, which are tightly coupled with the URIs and their mappings.

The close connection between SIP and DNS facilitates interoperability with telephone systems and addressing mechanisms, as DNS Electronic Numbering System supports International Telecommunications Union standard E.164 numbering through the efforts of the IETF ENUM Working Group. This lets SIP servers and clients send, receive and route telephone numbers.

SIP components are broadly divided into two groups: user elements and network elements. The user agent resides on a participant's chosen device (software on a PC, embedded in a mobile telephone operating system, PDA/palmtop device operating system, or the firmware element of an IP phone). The user agent contains server and client elements. The redirect server and proxy server perform routing and search tree functions. Both elements are typically network servers. A third network-based resource server is the registrar, which stores and receives participant locations.

SIP can enable a range of rich communication forms, including find me/follow me services, instant messaging, teleconferencing and videoconferencing, centrex-type services (caller ID, call waiting and call hold), multiplayer gaming, real-time group authoring and remote whiteboarding. Using SIP also can make connecting to VPNs easier.

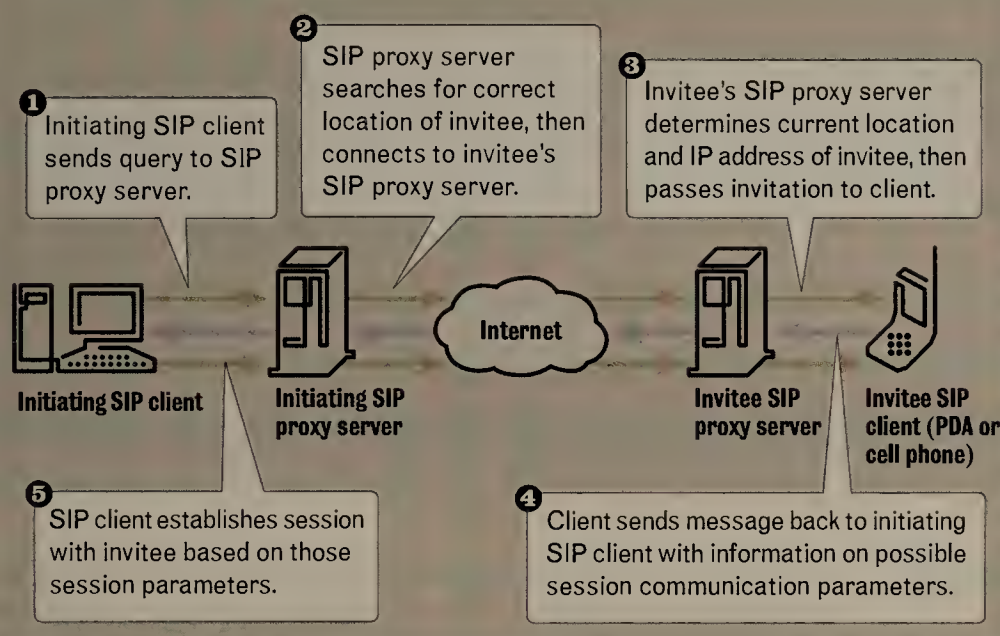
With SIP, it also is easy to combine conversational multimedia services with other categories of services, such as directory information, Web browsing, positioning and presence.

Because SIP is an application-layer protocol, it is access-independent. Participants can be reached on any form of IP network. As an example, SIP can offer seamless service capabilities between fixed and mobile networks, a key element in making the promise of fixed-to-mobile convergence a reality. This capability will gain importance as 2.5G and 3G mobile networks are rolled out across the globe.

Grobel is product manager with XACCT Technologies. He is based in Berlin, Germany and can be reached at ian.grobel@xacct.com.

How SIP works

Session Initiation Protocol sets up multimedia sessions between clients on an IP network based on the type of voice, video or data session each participant is capable of.



Tech Insider

■ See Tech Insider on how SIP is sparking a renewed interest in voice/data convergence. Page 41.

Ask Dr. Internet

By Steve Blass

In setting up our FTP server, we are having a problem with the time-out setting on our Cisco 678. When we use ws_ftp pro and try to connect, it times out. We want to forward all incoming requests for the FTP server to Port 21.

FTP uses two connections and two ports when transferring files. Clients initially open a connection to the FTP port (Port 21) to log on and issue commands to the FTP server. After a file transfer command is given, a data transfer connection is established on a second TCP port and used for the actual transfer. In active FTP mode, the server opens the data connection to the client based on a PORT command sent by the client. In passive mode the FTP client initiates the data connection by connecting to a nonprivileged port on the FTP server.

According to the Cisco 678 *Cisco Broadband Operating System 2.4 Users Guide*, you should be able to use the following commands to support passive FTP:

'set nat entry add ftp.server.inside.address 21 ftp.server.outside.address 21 tcp'
'set nat entry add ftp.server.inside.address 1025 65534 ftp.server.outside.address 1025-65534 tcp'

For a link that can give an explanation of active vs. passive FTP, go to www.nwfusion.com. DocFinder 1732.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

GEARHEAD INSIDE THE NETWORK MACHINE

Mark Gibbs



Describing software

In the quest by humans to bring order to the world, XML has become a major tool. Order is desperately needed in describing software. This is because some vendors make it reasonably easy to identify their software while others apparently don't care or haven't even thought of why it would be a good idea.

There are a few reasons why vendors should make their software identifiable. First, it would make auditing corporate software much easier, something that vendors should be wildly enthusiastic about. Second, it would make finding, buying and getting support for software a lot easier.

An XML-based de facto standard that addresses the latter issue has been offered by the Association of Shareware Professionals (www.asp-shareware.org/).

The standard, called the Portable Application Description (PAD), (thankfully it wasn't called Application Specification Standard), is an interesting idea (see the FAQ at www.nwfusion.com, DocFinder: 1735).

The PAD system defines an XML-encoded file with fields that include the author; software name; version number; release date; release status; cost in U.S. dollars and a field for cost in other currencies; descriptive data (short and long form); platform and subsystem requirements; and Web information (URLs) for support, sales, information, screen shots and download sites.

An important field in the Web information section is the URL of the PAD file. This means that any site would be able to check the source URL regularly to see if there has been an update.

The PAD specification — not quite as rigorous as a request for comment would be — can be found at DocFinder 1736. Actually, the PAD concept seems to be derived from something called Vendinfo, which is the basis for files with a .DIZ extension that you often see accompanying shareware distributions.

The PAD specification is pretty straightforward, and the Association of Shareware Professionals provides a freeware tool called PADGen (DocFinder: 1737) for creating PAD files.

PAD files also are extensible: Additional sections for extended descriptions can be included. The PADGen utility is smart enough to find any extension specification files (DocFinder: 1738) in its installation directory and make them available when editing a PAD file.

Some vendors make it reasonably easy to identify their software while others apparently don't care.

See the association's site for an example of a PAD file (DocFinder: 1739). Also check out the online demos of PAD and PADGen (DocFinder: 1740) which, we were interested to learn, use Qarbon's Viewlet system (www.qarbon.com) which we have previously written about with wild enthusiasm.

The association provides tools to help Webmasters handle PAD files (DocFinder: 1741). These include an Active Server Page script for Internet Information Server under NT (and presumably Windows 2000), which you can test drive (DocFinder: 1742). The association uses the Active Server Page script itself to support a Web-based PAD repository (DocFinder: 1743).

The association's PAD repository lets shareware authors upload, create and edit PAD files in the repository. The repository can also be searched. This generates a list that links to detailed displays of the PAD data as well as making the PAD files available for download (this lets other file archive and index sites build their databases from the association's repository).

On the association's site you can find a list of file archives and indexes that accept submissions using PAD (DocFinder: 1744). On the page you'll also find a short list of other tools (mainly software submission tools) that support the PAD standard.

There are some things we'd like to see in the PAD standard, such as support for vendor certificates so vendors can be authenticated. And how about something like MD5 checksums so package and application integrity can be verified? There also should be a URL for a previous versions page, which would allow for easy identification of prior releases. Of course this could be achieved through PAD extensions, but these requirements should be mandatory parts of the specification for what we think are pretty obvious reasons.

We commend the association for this initiative and hope to see it become something supported by the standards bodies.

Describe whatever you like to gear head@gibbs.com.



CoolTools

Quick takes on high-tech toys

By Keith Shaw

HP launches cameras, photo printers

Hewlett-Packard recently launched four photo printers and three digital cameras in its Photosmart line. The HP Photosmart 7550, 7350, 7150 and 130 are the new printers; the Photosmart 720, 620 ($300) and 320 are the cameras.

The 7550 ($400), 7350 ($250) and 7150 ($180) photo printers offer up to 4,800-dot-per-inch and up to six- and seven-ink color printing. The 7550 lets users preview, edit and enhance photos using its LCD screen and front-panel buttons. The 7550 and 7350 let users print borderless 4-by-6-inch prints and include slots that can accommodate CompactFlash, Secure Digital, SmartMedia, MultiMedia and Sony Memory Stick media that let users print without a PC. The three printers also include front Universal Serial Bus ports as another method for printing without a computer.

The 130 photo printer ($180) is a compact model for printing 4-by-6-inch prints while traveling. The 130 also includes Compact-Flash, Secure Digital, SmartMedia, MultiMedia and Sony Memory Stick card slots.

The cameras range in resolution from 2.1 megapixels (the $180 320) to 3.3 megapixels (the $330 720). The 720 camera also lets users capture sound and motion. The three digital cameras are compatible with an optional HP Photosmart 8881 digital camera dock, which lets users connect to a computer, TV or printer while recharging batteries.

All three cameras include Instant Share technology, Internet-based software that lets users share digital photos. From the back of the camera, a user can pick up to 14 destinations for any photo, then automatically send them to an e-mail address, printers or www.hpphoto.com. Low-resolution thumbnails are sent to the address with a link to the original high-resolution image. The original images are stored on HP's servers for up to 60 days. Users are allocated 200M bytes of storage.

The four printers are available now; the three cameras are expected to be shipped in the fall.



The HP Photosmart 7550 lets users preview photos on its LCD screen.

New virtual PC software

Connectix has announced availability of Virtual PC for Windows 5.0. The new version lets IT departments run applications in Microsoft Windows XP, 2000, NT, 98, 95, 3.1, and DOS, OS/2, NetWare and Linux — all on the same PC. The company says each virtual machine can emulate a complete hardware system, from processor to network card, in a self-contained software environment.

Corporations can use Virtual PC for Windows to do things such as upgrading to a new operating system while continuing to run legacy applications; let software development and quality assurance engineers test software against any combination of operating systems, or technical support groups help users run applications on different operating systems on one computer.

New features include enhanced CPU capacity controls, improvements to PC disk image support, increased RAM support and improved support for IBM's OS/2. The software costs $229 and is shipping. A free 45-day trial is available at www.connectix.com.

Nextel's latest cell phone

Nextel has announced the i60c mobile phone, a compact flip-phone handset that will include all of Nextel's services, including the Direct Connect "walkie-talkie" feature, Nextel Online Web, e-mail and messaging services.

The phone also features a speaker phone, a 250-entry phone book, VibraCall alert, and SIM card for easy transfer of information between handsets. It weighs about 5 ounces and measures 3.6 by 2 by 1.1 inches with its standard lithium ion battery. The company says the battery offers up to 165 minutes of talk time and up to 75 hours of standby time. The phone costs $150 with a 1-year service agreement. Go to www.nextel.com for more information.

Shaw can be reached at kshaw@nww.com.



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EDITORIAL

John Dix

MPLS is the future, but ATM hangs on

If there was one sentiment that summed up the seventh annual ATM Migration Challenge conference in Washington, D.C. last week it was this: Future public networks will have MPLS at the core, not ATM, and it is just a question of when and how each individual carrier will get there. For some, it will be quite some time.

As the chairman of the event, which is hosted by show organizer Marcus Evans, I went in more bullish on MPLS than ATM, a reverse of my attitude when I chaired the conference last time.

What changed? For one, MPLS has gained stability and wider support. In May, 21 vendors demonstrated MPLS interoperability at SuperComm.

Two, more companies are publicly talking about MPLS futures. AT&T CTO Hossein Eslambolchi recently told me he envisions AT&T having an MPLS core with an IP control plane. And three, as it becomes more evident that future applications will be based on IP, ATM looks increasingly long in the tooth.

But people at last week's event — which attracted standards setters, carrier and equipment representatives and a few enterprise users — convinced me that ATM might be longer lived than I presumed. As one speaker from a carrier said, "ATM is the cow that is generating revenue: We need to keep milking it."

With carrier capital equipment expenditures down 40% compared with two years ago (by some calculations), it may be a while before service providers are in a position to build out MPLS cores.

Some carriers, however, are using MPLS with success. Ron Bonica, senior manager of network design with WorldCom's Very high performance Backbone Network Service (VBNS+), reported to the group that contrary to some criticisms you hear about the standard, MPLS is stable and working fine.

Where work is needed is on the ATM/MPLS interworking so carriers can deploy MPLS cores and use ATM at the edge. The ATM Forum and the IETF have created solutions for carrying ATM over MPLS, and they have taken their respective positions (read, fight) to the International Telecommunication Union.

Thankfully, a compromise was worked out at a recent ITU meeting in Japan under which four ATM-MPLS-ATM encapsulation modes will be recognized, and the process can start moving forward.

The upshot: Better technology or not, MPLS won't supplant ATM overnight because there is too much sunken investment. It will take some time for MPLS to make inroads, especially in the current economic climate.

— John Dix
Editor in chief
jdix@nww.com

opinions!

Battle over

"Firewall limits vex VoIP users" (www.nwfusion.com, DocFinder: 1724) is an excellent, thought-provoking story for those of us who are in the business of selling this stuff. The current variety of voice-over-IP standards reminds me of the 1980s battles between Arcnet, Token Ring and Ethernet. With Microsoft including Session Initiation Protocol "free" in XP, it looks like H.323 has lost the standards battle without firing a shot.

Michael Light
Charleston, S.C.

Power play

Regarding Mark Gibbs' "Backspin" column "RIAA: Licensed to hack?" (www.nwfusion.com, DocFinder: 1726): So now the Recording Industry Association of America wants to have powers that even the U.S. government is denied by the Constitution?

The RIAA obviously will want to perform its "protective activities" anonymously. You are now guaranteed that data security has been permanently abolished. How can anyone know if a hacker has erased your hard disk, or if the RIAA did it? Or a hacker posing as the RIAA? How many of us have the free time, the extra finances and the legal leverage to investigate? If you must leave the front door unlocked for the RIAA to enter, how can you keep the hackers out?

Because the federal government is the entity responsible for creating and enforcing copyright law, then the RIAA would be acting as the government's enforcement agent. Therefore, the RIAA would be performing searches and seizures that cannot possibly meet constitutional muster.

As soon as the RIAA gets this power, Microsoft also will demand it. Then every time you log on, Microsoft will automatically erase your 100% Microsoft-free network, because no "MS-Approved" watermark was detected. Microsoft simply assumed that you were a pirate and acted accordingly — and free of liability.

The fundamental problem with the RIAA and its cohorts is that they believe their right to control the dissemination of information is absolute instead of relative. They believe their right to inflict punishment for perceived copyright violations exceeds everyone else's rights to security, privacy, make a living, choose alternative products, own private property.

Copyright is a lower-level right, less important than life, liberty and the pursuit of happiness. Any company or agency intending to risk my livelihood, my liberties and my happiness is violating the fundamental precepts of the very government they are demanding to support them.

Tom Nadeau
Dickson, Tenn.

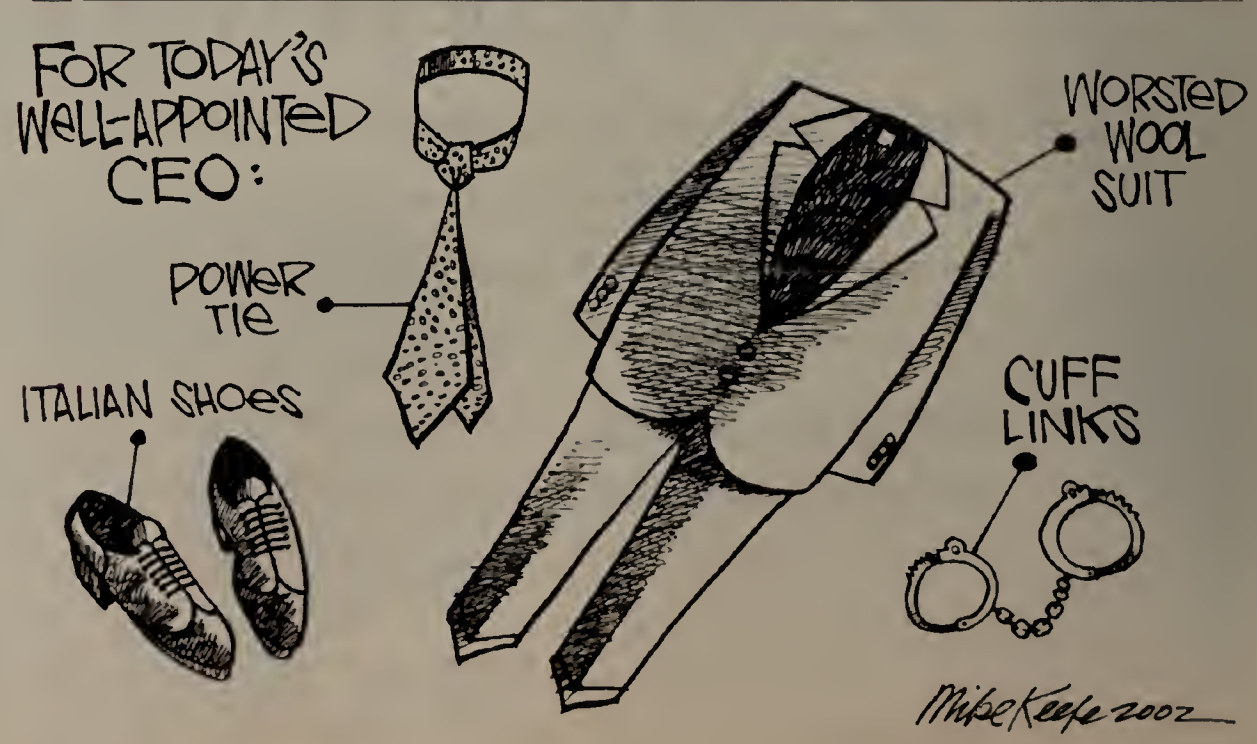
Checkered past

I was pleased to read Kevin Tolly's column on proper usage of grammar and vocabulary (www.nwfusion.com, DocFinder: 1725). As Tolly correctly points out, spell-checkers and grammar checkers are only assistants; they cannot replace actual human judgment. Spell-checkers do a fairly good job, but even they cannot capture everything. Homophones are the most notorious problem in this area. Grammar checkers are almost a joke. Here's a favorite from when I was a tutor: "Sizzling and snapping merrily, the girl watched the hamburgers cook." I have yet to see a grammar checker object to that sentence, and if you know how computers "think," then you understand why.

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E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

More online! www.nwfusion.com Find out what readers are saying about these and other topics. **DocFinder: 1723**





BOTTOM LINE

Joel Snyder

Securing the wireless LAN

Wireless LANs are too inexpensive to ignore, but security has stymied many network managers looking to bring wireless into the corporate fold. There's a lot of information and misinformation out there about issues and approaches. Here are some simple strategies to help guide your path.

First, educate yourself. The best place to start is Matthew Gast's "802.11 Wireless Networks: The Definitive Guide." Digest what Gast has to say and you'll be far ahead of the power curve.

The Internet has a lot of data and opinions on wireless, but it's difficult to get perspective on things without a good background primer. You need to put this into the context of corporate security. What threats are you worried about? How sensitive is the data on the wireless LAN? What vulnerabilities do you need to guard against? Sniffing? Denial of service? Freeloading? Impersonation? You'll never establish an appropriate 802.11 security policy for your corporate network if you don't think about these things now.

Second, do something to start. Wired Equivalent Privacy (WEP) is still an awful technique — it's like giving everyone in the company the same password and never changing it. But that doesn't mean you shouldn't use it. The theoretical attacks on WEP exploited by tools such as WEPcrack are blocked by modern firmware. In some recent testing using current releases of 10 different enterprise-class access points and eight different client cards, Initialization Vector-based attacks on WEP were no longer effective.

Use WEP and at least you're not blasting your wireless LAN out to any passerby. During some war-driving exercises last month, I found that more than half of the wireless LANs I could "see" from my car were not even using WEP to protect their data.

Third, arm yourself. Wireless tools like Airmagnet are fabulous for enterprise network managers. If you only have a few access points to worry about, a laptop or PocketPC with some public domain tools such as NetStumbler is a fine start. But without at least some tools, you're completely in the dark about the 2.4-GHz aura beginning to surround your network.

Fourth, prepare your strategy. For now, 802.1X-based authentication is the up-and-coming technology to help resolve basic wireless security problems. (You can read about my experience setting up 802.1X at www.nwfusion.com, DocFinder: 1722.) Or, go down the VPN path and treat wireless users the same way you treat remote access VPN clients. Either works fine with off-the-shelf hardware.

Over the long run, the IEEE 802.11i standard will lay out a path to higher security for wireless networks that combines 802.1X authentication with better key management than is available on WEP. But that standard is still being cooked, and it will be a year or more before things completely settle.

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Use WEP and at least you're not blasting your wireless LAN out to any passerby in the clear.



ABOVE THE CLOUD

James Kobielus

Microsoft supports SAML, sort of

Microsoft has taken a small step in the right direction by agreeing to implement Security Assertion Markup Language 1.0 in its upcoming .Net operating environment. Although Microsoft's announcement was short on specifics, such as the future availability of SAML-enabled .Net security features, the company deserves commendation for this important move toward support for a standard that most of the Web services security industry has long since embraced.

SAML 1.0 is fast becoming the dominant industry standard for federating diverse security environments in support of multidomain Web single sign-on (SSO), role-based access control (RBAC) and other interoperability scenarios. Microsoft's announcement was just one of several events at Burton Group's Catalyst 2002 North America that showed SAML 1.0 has considerable industry momentum and support. At the conference, the Liberty Alliance industry consortium released its Phase One specifications, which it has developed as extensions to the core SAML 1.0 standard. Many Web access management vendors announced their own plans to ship SAML 1.0-enabled products in the next several months.

Microsoft's decision to support SAML showed that even this powerful vendor can't long resist market forces that have been calling for vendors to converge around common Web security standards. Microsoft presented a compelling vision of federated .Net security environments that incorporate, in addition to SAML 1.0, such specifications as Kerberos, Passport, Web Services Security (WS-Security), TrustBridge, X.509 public-key certificates and Extensible Rights Markup Language access-control licenses. SAML 1.0, in Microsoft's grand scheme, will be used primarily as an XML syntax for describing authentication and authorization "assertion" data structures to be interchanged between .Net and other operating and security environments.

Unfortunately, Microsoft is up to its usual habit of playing games with open standards. The vendor announced that it won't be implementing major portions of SAML 1.0, including the standard's Simple Object Access Protocol (SOAP) binding, Web browser profiles or request/response messaging protocol. Instead of placing SAML assertions in the payload of SOAP messages (in compliance with SAML 1.0), Microsoft will place them in the SOAP header, alongside Kerberos tickets and other claims, in conformance with the Microsoft co-developed WS-Security specification.

We should regard Microsoft's federated security architecture as offering just token support for SAML 1.0. It's not clear how, if at all, Microsoft's SAML implementation will interoperate with other vendors' Web services security products. Microsoft won't implement even the minimal set of SAML 1.0 features that would have been necessary for it to participate in the industry demonstration at this year's Catalyst. The vendor's SAML discussion at Catalyst revolved primarily around the standard's role in facilitating federation over the Internet between .Net-based Kerberos domains that implement WS-Security and TrustBridge. Microsoft's single-vendor federation scenario has little in common with the multivendor SSO/RBAC interoperability demonstrated elsewhere at Catalyst. It's purely Microsoft-centric.

Microsoft's business model in the enterprise software market has long revolved around implementing whatever blend of proprietary and open standards can secure market share most quickly in whatever product niche it has targeted. WS-Security is a specification with great promise, and it includes features that will likely be adopted in future versions of the SAML standard, but it is not yet supported in the SAML 1.0-enabled products that other vendors will be releasing soon.

It's disappointing to see Microsoft take this quasi-proprietary tack with SAML 1.0. Let's hope the folks in Redmond realize soon that inadequate, half-hearted SAML support will only make it more difficult for their customers to implement federated, multivendor security environments.

Kobielus is a senior analyst with The Burton Group, an IT advisory service that provides in-depth technology analysis for network planners. He can be reached at jkobielus@burtongroup.com. The opinions expressed are his own.

We should regard Microsoft's federated security architecture as offering just token support for SAML 1.0.

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The promise of new applications sparks interest in converged networks.

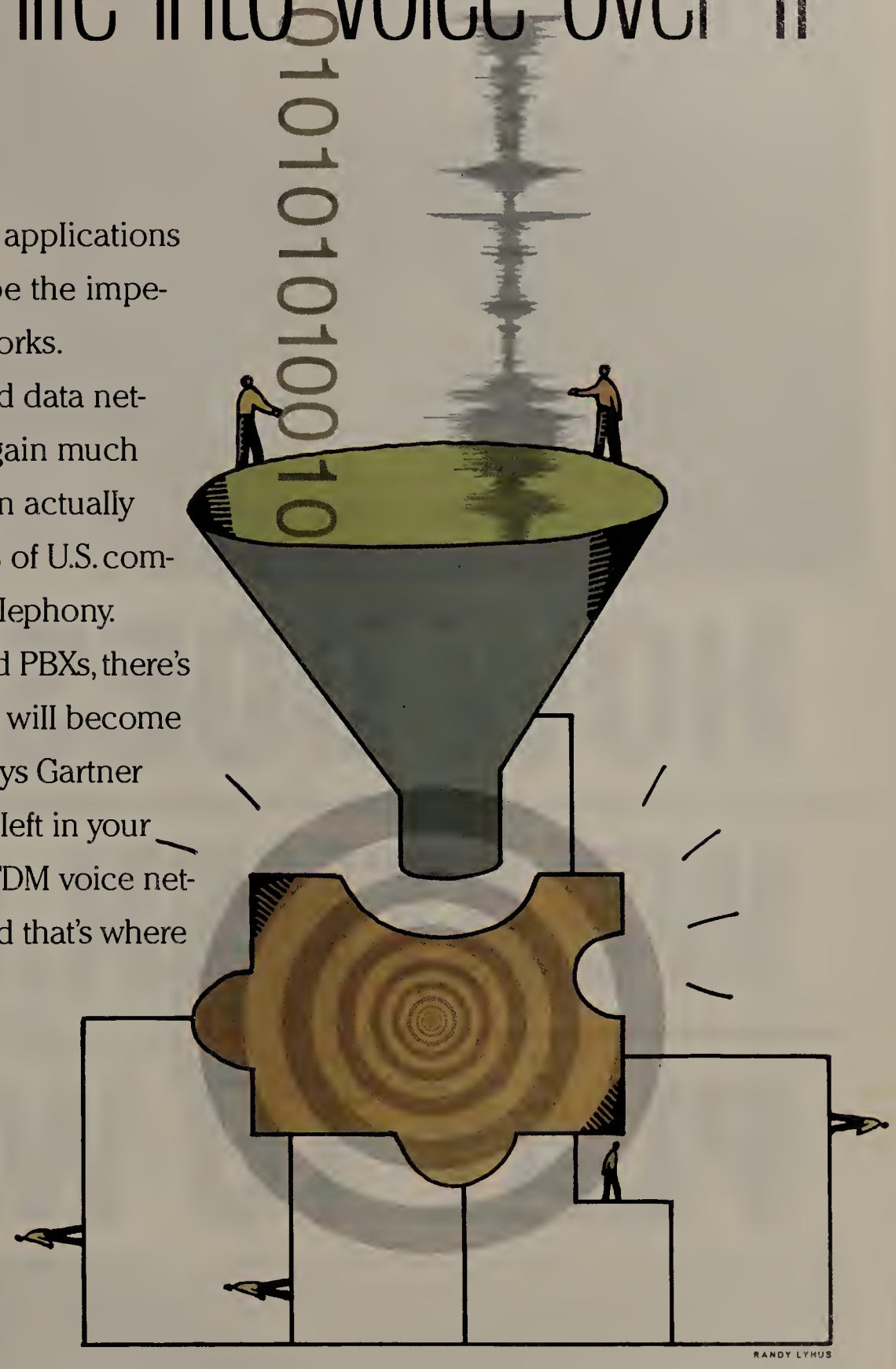
SIP breathes new life into voice over IP

■ BY SUSAN BREIDENBACH

A new class of flexible, instantaneous, multimedia applications enabled by Session Initiation Protocol could well be the impetus for more companies to deploy converged networks.

Despite years of hype, the convergence of voice and data networks onto a single IP-based platform has failed to gain much traction. According to Gartner, voice-over-IP migration actually slowed a bit in 2001. InfoTech estimates that only 6% of U.S. companies have scheduled volume rollouts of IP LAN telephony.

Still, with all the PBX vendors now shipping IP-based PBXs, there's not much doubt that eventually converged networks will become the norm. "It's no longer a question of if, but when," says Gartner analyst Kathleen Simpson. But if there's plenty of life left in your PBX, you aren't likely to scrap your circuit-switched, TDM voice network unless there's a compelling reason to do so. And that's where SIP-based applications come in.



RANDY LYHUS

"TDM is the world's sturdiest, most ubiquitous network, and you need sound business reasons for replacing it," says Dave Moore, director of Nortel's enterprise marketing team. "Finally, here are the applications you cannot do in the TDM world. Once companies see how they can marry these technologies to their businesses, you will see VoIP adoption rates go up."

SIP is a simple, lightweight protocol that lets end users instantly set up interactive communication sessions. These sessions can include any combination of voice, video and data, and SIP-enabled gear will automatically recognize the type of presence each participant maintains. This would let businesses respond quickly to crises by pulling people into sessions over whatever

See SIP, page 44

INSIDER

In today's economic climate, upgrading to a converged voice/data network is a tough sell. But new applications, based on Session Initiation Protocol, could break the log-jam and drive new enterprise rollouts.

45

Convergence at warp speed: The Borough of Manhattan Community College had a game plan for rolling out VoIP. Then came the Sept. 11 terrorist attacks, which damaged one of the campus buildings and forced the college to move to temporary classrooms.

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VoIP makes the grade: In this Sector Spotlight on education, school districts across the country are moving to converged networks to save on telecom costs and to provide new applications to teachers and administrators.

Online

Getting ready for VoIP: Even if you're not launching a voice over IP project today, it's a good idea to start planning for the day when your network infrastructure is called on to support voice traffic. Read it at www.nwfusion.com, DocFinder: 1730



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SIP
Continued from page 41

connectivity method is available to them. During these sessions, people can send files or Web pages to one another and browse or use applications together.

Image problems

However, some major hurdles must be cleared first — even if they involve perception more than reality:

- Reliability is still regarded as a major issue, and data network infrastructures might need costly upgrades to provide the stability and redundancy required for 99.999% uptime. Routers and switches have to be voice-capable, all traffic to desktops must be switched, and cabling might need to be replaced or terminated again. The voice quality problem largely has been licked, but only if there is plenty of bandwidth from end to end. Also, there is still work to be done on a standard for delivering electrical power to phones over Ethernet.

However, some early VoIP adopters say experience has put their reliability concerns to rest.

"Our [Cisco AVVID] IP PBX has been more reliable" than a traditional TDM switch, says Byron Vielehr, CTO in charge of Merrill Lynch's 5,000-user VoIP installation in Hopewell, N.J. "We put in [universal power supplies] when we were building the network out, so when we lost power to the facility, the IP PBX stayed up and running beyond what a legacy system would have been able to do."

The distributed nature of IP infrastructures also provides some inherent fault tolerance that centralized PBX switches don't have. When the Sept. 11 terrorist attacks took down the local public phone network, Merrill Lynch restored phone service to employees in New York City by connecting them to the VoIP network in New Jersey.

- The feature gap between VoIP and TDM switches also has been narrowing.

"Many of the 500-odd features in legacy PBX systems were not available in any IP-based voice switches until recently," says Mark Straton, a senior vice president in Siemens' enterprise networks division. "You paid more and got less." Today, Cisco's pure IP PBX platform offers about 300 features, and most users will never miss those that are absent.

IP inevitability

Gartner is projecting that in 2005,

75%

of new voice-switch shipments will be IP-based systems.

Also, because the IP PBX is an open platform, "you can add such features yourself by writing a little code, and you can deal with it on the application side," Vielehr says.

- The softswitch foundation of IP PBXs also creates some image problems. While traditional PBXs have separate physical ports for each end station and switch calls on physical circuits, IP PBXs are software-based and use virtual ports. This makes them seem less solid, but it conveys a huge advantage.

"We can leverage the packet and server and [operating system] technologies to produce triple the performance of our largest Definity PBX," says Jorge Blanco, director of planning and strategy for converged enterprise systems at Avaya. "You can support more users and more calls."

Softswitches are inherently more flexible and can carry voice, video and data traffic more efficiently than platforms using traditional hardware switching, making it easier to implement new features and applications.

However, superior scalability and performance are not the current perception people have of them. "The sweet spot for VoIP is still environments with less than 100 lines," Simpson says.

Where's the ROI?

Return on investment (ROI) is probably the biggest single stumbling block for VoIP. "That's what customers ask first," Blanco says. "'Show me the ROI.'"

One problem is that existing PBXs have a lot of life left in them, in part to Y2K-driven upgrades. And most early adopters of VoIP agree that instant savings are not what you should be sought.

"We expected VoIP to cost more," says Christopher Roth, IT manager for Digirad, a San Diego medical-device manufacturer that has implemented a VoIP network based on Avaya technology.

In early 2000, Digirad was outgrowing a Norstar key system and decided to replace it with an IP-based platform. Nortel didn't have one yet, and Roth and his staff rejected a pure IP player in favor of Lucent (now Avaya). "When I need voice support, I want to call Bell Labs," Roth says.

On the plus side, VoIP has reduced the cost of moves, adds and changes. Also, going with a softswitch eliminated the need to put a separate switch on each of the company's two locations that spans seven buildings. There is money to be saved via toll bypass, especially on intrastate long-distance traffic.

However, the cost of additional bandwidth and bandwidth management have more than offset the savings. "Bandwidth is fine on the LAN links," Roth says. "The problems always occur over the T-3 WAN links. During peak times, voice occasionally degrades a bit. But for the most part, people don't notice." He says he occasionally maxes out three T-3 connections with the voice and data traffic generated by 200-plus users.

A trade-off between easier administration and harder management is typical in VoIP environments, although vendors say they are addressing the issue of VoIP packet monitoring.

Roth expects the real VoIP payoff to come in the near future, when integrated voice/data applications start to appear.

"Entire call centers will move to SIP to erase the seam between voice communication and CRM applications. And SIP will change the way businesses do [video teleconferencing], and put this very rich mode of communication within the reach of more people," he says.

Breidenbach is a freelance writer living in Nevada. She can reached at sbreide@aol.com.

Encorp comes back for encore

Encorp, a start-up developing automation technology for power companies, is on its second voice-over-IP platform. Three years ago, the company was spread across three facilities in Windsor, Colo., and implemented 3Com's NBX softswitch. Fivefold growth caused data traffic to start flooding the network, and Encorp switched to Alcatel's Unix-based PCX platform last year when operations were consolidated in a brand-new facility.

From the core switch, Gigabit Ethernet runs over fiber to 11 distribution closets, and then 100M bit/sec Ethernet runs across copper to the desktops. "Our initial cabling costs were cut in half," says Stan Seago, director of IT for Encorp. And because softswitch ports are virtual, there are no punchdown blocks [points where individual wires from each phone extension on a TDM network are aggregated before connection to public switched telephone network trunk lines], "so our data center is actually very small."

The PCX system cost about the same as a comparable TDM switch, partly because the IP phones are expensive. "We were paying about $300 in the 3Com world, and between the phone gear and licensing and configuration costs, we're now paying about $500," Seago says.

Softphones attached to desktop PCs could reduce these costs somewhat, but they don't have the same look and feel as regular phones. They require more user training, and can add configuration and support factors to the total cost of ownership of the desktop systems.

Training administrators on the PCX's complex Unix interface also was a cost, although once the phones were set up, they required virtually no support.

"We've done almost nothing in the past year except make sure the [virtual] LAN is up and running," Seago says.

Encorp's remote offices can be served by the central softswitch, with outgoing long-distance calls getting aggregated through the main office so there are higher volumes on a single contract.

Another benefit is the ability to deploy mobile voice communications over the wireless Ethernet LAN on the factory floor. Encorp is using phones that connect to 802.11b access points from Symbol Technologies.

FedEx Freight saves with voice over frame relay

In 2001, FedEx Freight, a subsidiary of FedEx formed largely through the acquisition of American Freightways and Viking Freight, had 270 customer centers with a patchwork of vintage key systems that were starting to fail. The company specializes in deliveries to customers engaged in just-in-time manufacturing and has to maintain constant voice communication with thousands of drivers around the country.

FedEx Freight chose the Siemens HiCom iHi150 VoIP platform and hopes to have more than 100 sites converted before year-end. The switches are equipped with frame relay interfaces so that voice traffic can piggyback on the frame relay data network and use available bandwidth.

"It's reduced our monthly outlay on [software defined networks], and we are getting a payback of about seven months," says Jeff Amerine, managing director of communications and network services for FedEx Freight. He says the company is testing voice-over-IP on the smaller locations, and then expects to deploy larger Siemens HiPath switches — 4000s or 5000s — at the bigger sites.

Amerine says FedEx Freight went with a hybrid platform from an established PBX vendor because the switches available at the time from the pure IP players were missing too many features, or implemented them in ways that were "too kludge-y."

— Susan Breidenbach

Terrorist attack kicked VoIP pilot program into high gear

A New York college turned on its VoIP network when Centrex service was knocked out.

At the Borough of Manhattan Community College in New York, a voice-over-IP migration pilot underwent baptism by fire when the terrorist attacks of Sept. 11 prompted a more aggressive approach to convergence.

Serving 17,000 students just blocks from Ground Zero, BMCC is part of the City University of New York (CCNY) and the largest single college in New York City. Classes were under way when World Trade Center towers collapsed, taking Verizon's access network offline indefinitely and damaging one of the college's two main buildings. Fiterman Hall at 30 West Broadway is still out of commission, and BMCC is using temporary classrooms at an uptown CCNY facility.

BMCC started looking at VoIP in 2000 when a pending migration from an ATM-based network to an all-Ethernet environment provided an upgrade opportunity. The plan was to implement VoIP in the data center and then roll it out to the entire school.

The 155M bit/sec ATM core was being replaced with Gigabit Ethernet running across redundant multimode fiber connections. And while the 1,500 workstations in the academic departments were already on 10M or 10/100M bit/sec Ethernet, the 700 desktops throughout the administrative departments — including IT — were equipped with 25M bit/sec ATM.

"We had to touch each desktop machine, because the ATM [network interface cards] had to be removed," says Joseph Giummo, associate director of IT for BMCC. The Ethernet equipment was staged last summer, and computer center was migrated just before fall classes began.

Giummo and his staff expected to complete the Ethernet conversion by Thanksgiving. Once the infrastructure was in place, the VoIP pilot could begin.

Then came Sept. 11. BMCC lost one building, and Verizon's Centrex service to the nearby main campus vanished.

Thanks to the location-independent nature of the Internet, BMCC's e-mail and distance-learning servers were moved and back online within days. No one knew when Verizon's access network would be back up.

"An institution of higher education cannot disappear off the phone network and Internet for any length of time and stay in business," Giummo says. The pending VoIP pilot suddenly took on a whole new meaning.

The upgrade to Gigabit Ethernet was kicked into overdrive, and the entire school was moved from ATM by the time the main campus reopened Oct. 1. This provided the necessary infrastructure for the Alcatel PCX 4400, an open, Unix-based PBX platform that can support IP, digital and analog handsets.

The equipment was rushed from Paris to within four blocks of Ground Zero through some major security checkpoints. And the 70 IP phones for the pilot suddenly swelled to 725, making BMCC one of the largest IP-telephony installations in the New York area.

The expensive IP phones were deployed in a top-down fashion, starting with the college president and department heads. However, the administrative staff handling student information services was near the top of the list as well, because it was important that students could call in and find out when the school was reopening.

The Alcatel switch also supports a number of analog and digital phones, and 35 fax lines. A small wall-mounted cabinet — the OmniPCX 4400 WAN — concentrates the connections in the temporary mobile classrooms at CCNY back to the PCX 4400 at the main campus.

The converged network requires constant tweaking, but the PCX management server helps. Initially, BMCC was taking advantage of four basic reports: usage, trunk summary, cost center and transport primary rate interfaces.

BMCC has plotted out a four-year return on investment. Part of the return will come from eliminating $25,000-per-month Centrex charges, though the cost of in-house management will offset some of these savings.

According to Alcatel, the price per seat for VoIP ranges from $600 to $1,000, depending on volume and features.

"But when you look at the convenience of putting voice, data and video over the same pipe, and consider the new applications this convergence enables, it will save money in the long run," Giummo says.

The first new application BMCC plans to implement involves interactive voice response technology to enhance the Web-based student registration process.

The college also is developing a call center application that will give the Student Information Services staff members instant access to more information and let them respond more quickly and thoroughly to student requests.

— Susan Breidenbach



> "When you look at the convenience of putting voice, data and video over the same pipe, and consider the new applications this convergence enables, it will save money in the long run."
>
> **Joseph Giummo,**
> Associate director of IT, Borough of Manhattan Community College

More online!

Go online for a detailed network diagram showing BMCC's voice-over-IP implementation.

DocFinder: 1730

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VoIP makes the grade

IT pros in public school districts reap savings from network convergence.

BY PHIL HOCHMUTH

While K-12 public schools typically aren't known for their cutting-edge networks, many education IT professionals are learning quickly the ABCs of voice over IP through early deployments.

Public school districts around the country are implementing voice/data convergence as a way to reduce telecom costs while offering telephony features to staff and administrators that go far beyond what was available in the past on traditional phone systems.

Many school districts now run Gigabit Ethernet metropolitan-area networks after securing long-reach fiber-optic cabling through deals with local telecom and cable TV providers, or by pooling resources with other organizations. This boost in bandwidth has spurred IP telephony deployment in school districts such as the Ridley School District in Folsom, Pa.

EDUCATION: AT A GLANCE

- A full 63% of public school classrooms are wired for data and Internet access, up from 3% in 1994.
- In 2000, 77% of public schools had dedicated WAN connectivity through 56K bit/sec, T-1 or T-3 lines.
- $5.8 billion has been spent on technology in public schools through the federally subsized E-rate program.
- 58% of public school IT funding comes from local school districts.

SOURCE: NATIONAL CENTER FOR EDUCATION STATISTICS

Ridley recently installed Alcatel's OmniPCX 4400 — a hybrid IP and traditional TDM PBX — and 150 IP phones throughout seven elementary schools, a middle school and a high school. "We were looking to reduce our overall telecom costs, and one way to do that was to centralize multiple switches and consolidate the number of lines we needed," says Nicholas Ignatuk, Ridley School District superintendent.

As part of cable company Comcast's franchise agreement with the town of Folsom, it installed fiber-optic cable to link all the district's sites. All the IP phones connect to the OmniPCX 4400 over a Gigabit Ethernet backbone, eliminating the $4,000 monthly expense for T-1 lines to join PBXs in each school. The Alcatel box and phones cost about $94,600.

With phones in most classrooms and common areas, such as lunchrooms and auditoriums, teachers can contact each other more easily than when they relied on student couriers to deliver handwritten notes. More phones also make it easier to call 911 or school administrators in an emergency.

What's more, the OmniPCX gives voice mail to all teachers and administrators for the first time. Next year, the district will integrate its e-mail servers with voice mail to provide a unified messaging system. Ignatuk says the biggest challenge of this rollout will be end-user training, because the school year affords little time for teachers to learn new technologies.

In the western Texas Tornillo School District near El Paso, Altigen's hybrid TDM/VoIP system let the district deploy $30 commodity analog phones in classrooms and offices while using IP to run voice traffic between two high schools.

Instead of upgrading the schools' Nortel key systems, Chuck Palmer, network specialist for the district, chose an Altigen AltiServ box for each site. Unlike the key systems, the AltiServs can be linked directly over a T-1 data line and may share a similar four-digit dial plan.

Palmer says VoIP eliminated the need for several outside phone lines at both sites, saving about $3,400 per month. And because federal E-rate funding pays for 90% of the school's T-1 costs, all internal calls between the buildings are basically free.

With voice now running over the T-1 line connecting the schools, there is still enough bandwidth for Internet traffic and sharing network resources, such as a CD-ROM library. Teachers in the south high school can access school records housed on servers in the north building across town without application slowdown, Palmer adds.

Another big cost savings came by breaking away from the proprietary Nortel key system and phones. "The most expensive part of any voice system are the phones themselves," Palmer says. With the Nortel phones costing about $120, he says, "we saved almost $50,000 on [total equipment expense] because we were able to use inexpensive phones." The total cost of the project was about $76,000.

Recurring costs of maintenance for its PBXs and monthly Centrex phone charges are some of the things the Appleton School District in Wisconsin is looking to avoid when it goes live with a six-site VoIP network based on Mitel's 3340 IP PBX.

The district, which still has several PBXs from various vendors and Centrex lines from Ameritech, now has a high school and an administrative building using the Mitel system. Once the Mitel boxes are installed at six central sites, extending IP telephony connections to the district's 24 buildings will be simple, says Jim Hawbaker, the district's technology director. All buildings are linked via Gigabit Ethernet running on single-mode fiber. The district and several other municipal organizations pooled their money together to have private fiber installed for each of the groups, which includes the public works department, libraries and police.

"The fiber is the real enabling factor that's letting us use [VoIP] on such a large scale," Hawbaker says.

Hawbaker says that while the high-speed fiber network will ease the school district's IP telephony deployment, the biggest challenge will come in designing a cohesive four-digit dial plan for the various departments in the school district.

Although the complete Mitel system cost $1.2 million for the six Mitel boxes and more than 200 IP phones, Hawbaker says eliminating PBX maintenance contracts and consolidating from 900 outside phone lines throughout the district to 140 centralized lines will save about $600,000 per year. He expects to have the system paid for in three years.

While IP telephony and VoIP have helped some schools cut telecom costs by converging separate networks, the Pendergast School District in Phoenix is taking IP telephony to the next level, in its classrooms. The district recently replaced multiple key telephone systems with three Cisco CallManager IP PBXs in its data center, and deployed Cisco 7940 and 7910 IP telephones in classrooms and administrative offices — around 2,000 phones. Everything is tied together with a routed Cisco-based WAN, which runs voice and data.

With the XML and Java capabilities on the Cisco IP phones, Pendergast worked with XML application vendor Calence to develop applications that could tap the converged network, says John Moreno, MIS director for the school district.

Teachers at the Pendergast schools now use the IP phones to enter data such as class attendance and to check on student records. Teachers can view text on the LCD screens on the phones and enter information through the keypad or with programmed special feature buttons.

The phone-based applications access an XML-enabled Web server, which interfaces to an IBM AS/400, where all student records are kept.

The phone-based applications let the school process student attendance totals in minutes instead of half days, Moreno says, which allows the school to contact parents more quickly when it can't account for students. ■



More online!

The boom in network buildouts among school districts has prompted concern about hackers and virus outbreaks. Find out how some schools are tackling security challenges.

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Moving lab results into the enterprise

TESTER'S CHOICE
Barry Nance



Remember qualitative and quantitative analysis from high school science lab? They are two fundamentals in the development of critical thinking skills. The same principles apply when you're evaluating products in a network laboratory environment and you want the results to be and relevant to your network.

No matter how large and well-equipped a network lab might be, it can't be a perfect simulation for corporations. But a scientific approach to the lab's evaluations can help you accurately extrapolate lab results to reach enterprisewide conclusions.

Understanding the qualitative analysis aspect of a product evaluation is easy. You exercise a product's features and functions to find out whether the product works the way your company expects it to. You decide on the quality of the product's user interface, how it performs basic operations, its documentation and its overall design.

Quantitative analysis is more difficult. Correctly measuring the numeric characteristics of hardware and software can be a painstaking process, especially with respect to performance and scalability. However, the numbers are key criteria not only for a purchase decision but also for the process of sizing the computing environment into which you install it.

Determining how quickly a product performs under different conditions involves quantitative analysis after you've jotted down data from a series of tests. Part of this analysis identifies the factors that influence how fast the product works.

Your own experience tells you what these factors are and how to account for them. For example, a prospective new file server or Web server may appear equally responsive when confronted by workloads from 10, 20, 50 or 100 clients. Because you know that CPU speed, memory, hard disk speed and network adapter processing speed primarily govern server responsiveness, you'll want to run four groups of additional tests: one while running a program on the server that consumes CPU; one while running a memory-intensive program; one while running a demanding file-oriented program; and one group while running a traffic-generating program on the server. You also can use a protocol analyzer to generate specific amounts of network traffic for the server to compete with. You deliberately create a variety of potential bottlenecks and limitations to gauge how the product will behave.

The most important distinction between the lab and the enterprise is scale. How well will the product you're testing do its job when its workload increases? If a server under evaluation seems equally responsive with workloads from 10 to 50 clients but bogs down in the presence of 100 clients, you have data quantifying the server's scalability. In your tests, you incrementally alter the workload to discover how many units of work the product can handle, then extrapolate that data to reach conclusions for the entire company. Your scientific approach means you can be confident about your conclusions.

Nance, a software developer and consultant for 29 years, is the author of Introduction to Networking, 4th Edition *and* Client/Server LAN Programming, *can be reached at barryn@erols.com*

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Taking stock of skills

Travelers and IBM launched skills assessment programs to guide their IT staffs' career development.

■ BY LINDA LEUNG

Insurance firm Travelers had a policy problem on its hands. The company's decentralized training strategy made it tough to effectively track course attendance and ensure curriculum was relevant for its 2,000 IT pros.

So two years ago, Travelers created its Learning Management System (LMS). Now workers can view and enroll in classes, and managers can use the data to better target offerings. And to let employees identify career paths, the insurer turned to skills assessment vendor SkillView to integrate its software with LMS.

Workers use the desktop application to learn their skills proficiencies and gaps. This information also helps managers pull together the best people for specific projects and develop their staff.

"Once the company knew what training courses were available on an organizational level, the next question was what training is needed. That was the catalyst for the skills assessment program," says Marc Berube, IS training manager at Travelers in Hartford, Conn.

The first step was for managers to develop a model skills profile for different jobs, such as network operations center technician and provisioning technician, and identify various levels, such as beginner, intermediate and senior.

Employees access the profile that reflects the skills and proficiency expectations for their positions. Users rate themselves against the criteria, from not proficient to expert. Managers also rate staffers and discuss discrepancies to determine agreed-upon scores. The SkillView application generates development plans, and LMS provides links to the relevant available training courses.

Rob McKinley, network operations manager at Travelers, says, "It gives everyone from management on down a strong assessment of where they are and what they need to improve."

Kazim Isfahani, principal analyst at Robert Frances Group, agrees that skills assessment can benefit organizations and employees. However, he says that some employees could fear the results would be used to help identify layoff candidates.

"At the start of the process you should communicate that the database would not be used to remove people, but to help make sure they have the right skills," Isfahani says.

At IBM, techies use the firm's skills assessment program to put themselves in better reach for potential promotions to executive levels.

Since the early 1990s, IBM has run the IBM Professions Certification program to certify IT specialists, consultants, network architects and project managers. Of IBM's 15,000 IT workers in the U.S., 1,300 are IBM-certified IT Specialists.

To earn certification, individuals have to "defend" their experiences and qualifications, much as undergraduates would defend their theses, says Edge Nowlin, IBM Americas IT specialist discipline leader for networking and systems management.

Candidates must have a minimum of eight years' experience in their fields, be skilled in new technologies such as wireless, and create a 25- to 40-page document detailing their professional certifications and experience leading projects and writing contracts.

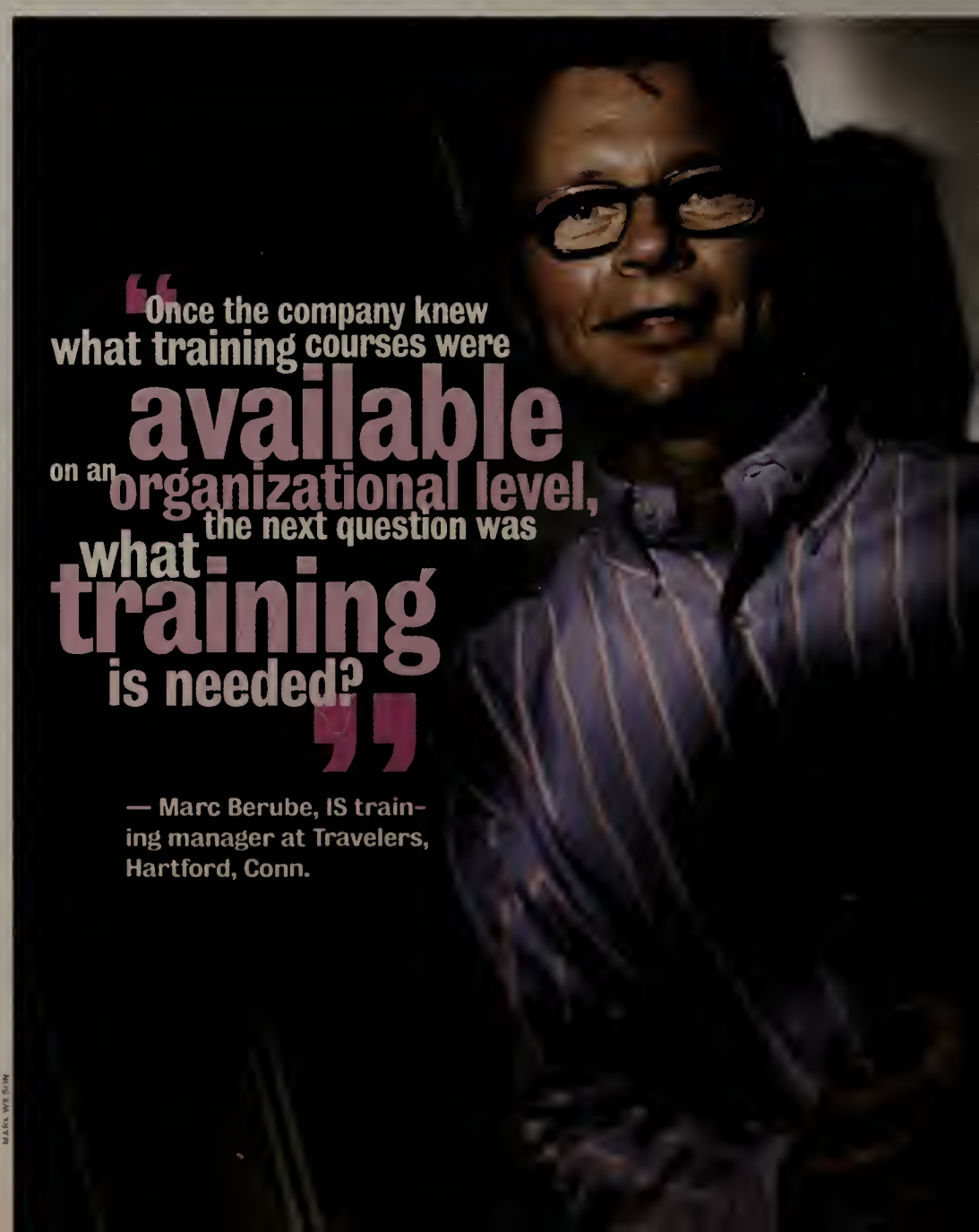
Although employees outline their technical knowledge in their applications, IBM wanted to recommend tests that would let candidates better demonstrate their skills. The company settled on using skills assessment tests from BrainBench and its own IBM Tivoli and Lotus certification exams.

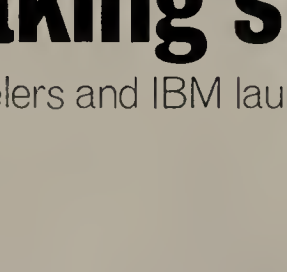
Candidates aren't forced to take those tests, but the interviewers look favorably upon those who do and pass. Along with the IBM software exams, the vendor has made a range of BrainBench tests available on its intranet. Topics include project management and ATM.

Rather than awarding a pass or fail grade, BrainBench exams award a score ranging from 0 and 5. Candidates who score 2.75 are awarded a BrainBench certification, while those who get a 4.0 or higher achieve a master level certification.

Depending on their skill levels, the BrainBench system offers candidates a link to the top five books on Amazon.com that could help improve their knowledge. And by the end of the summer, IBM plans to begin building a database of staffers who achieve BrainBench's master level certification so that other candidates can contact them for mentoring opportunities.

"The self-analysis is extremely worthwhile. People can look back over their careers and realize that they are as strong as anyone in the industry," Nowlin says. ■



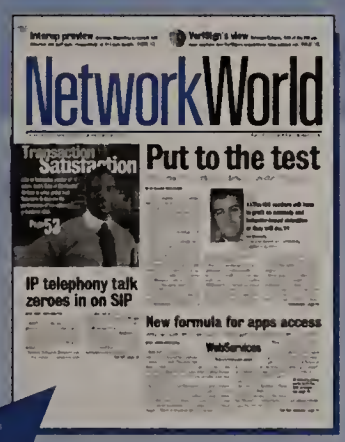


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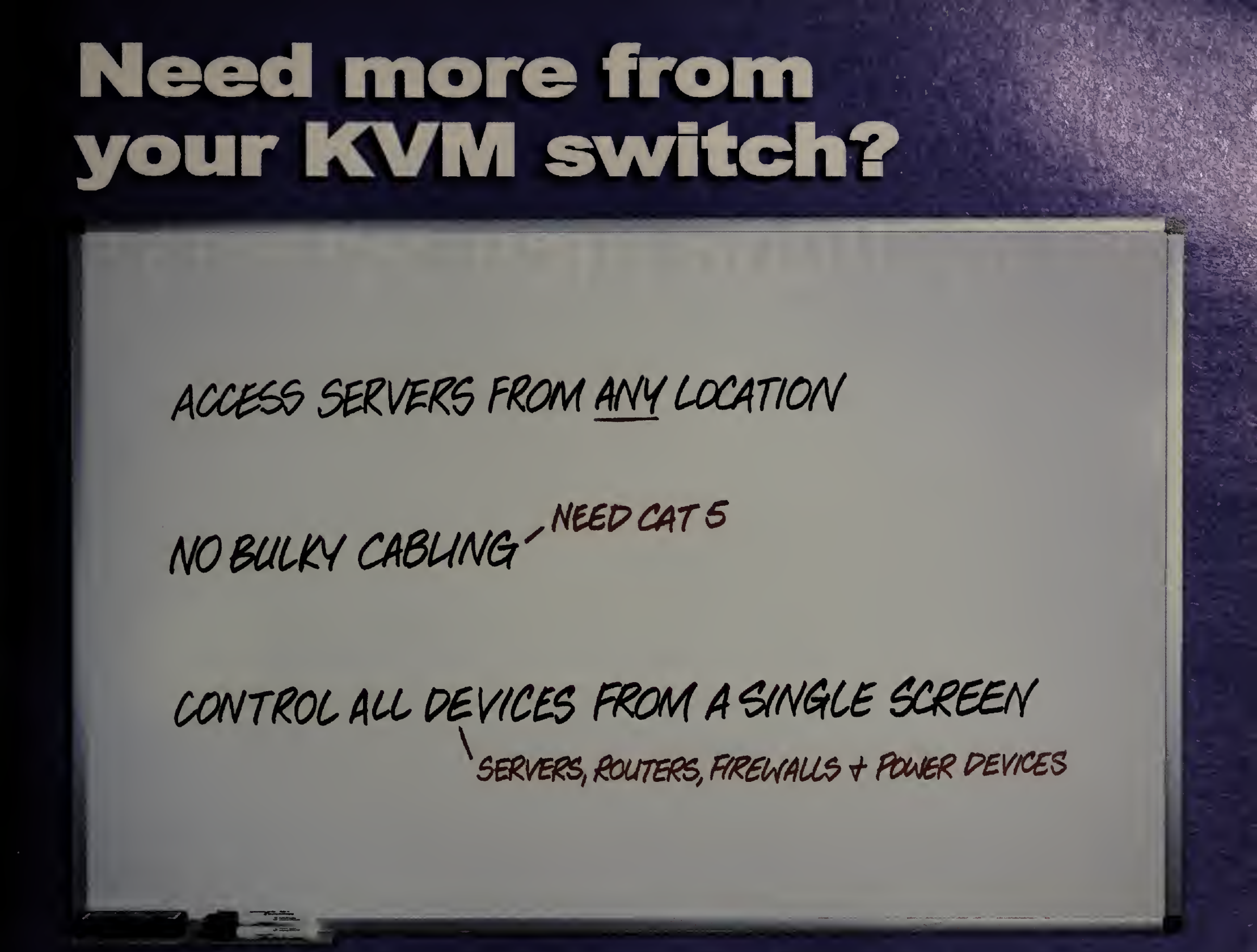
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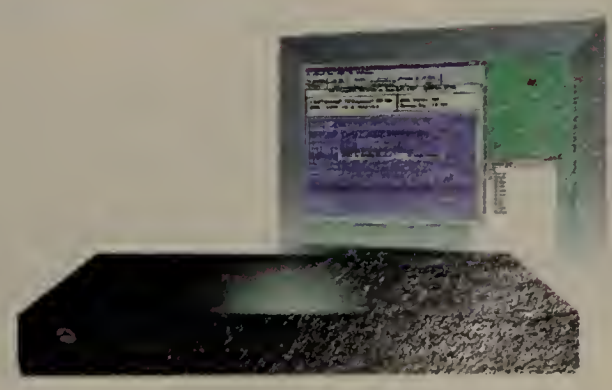


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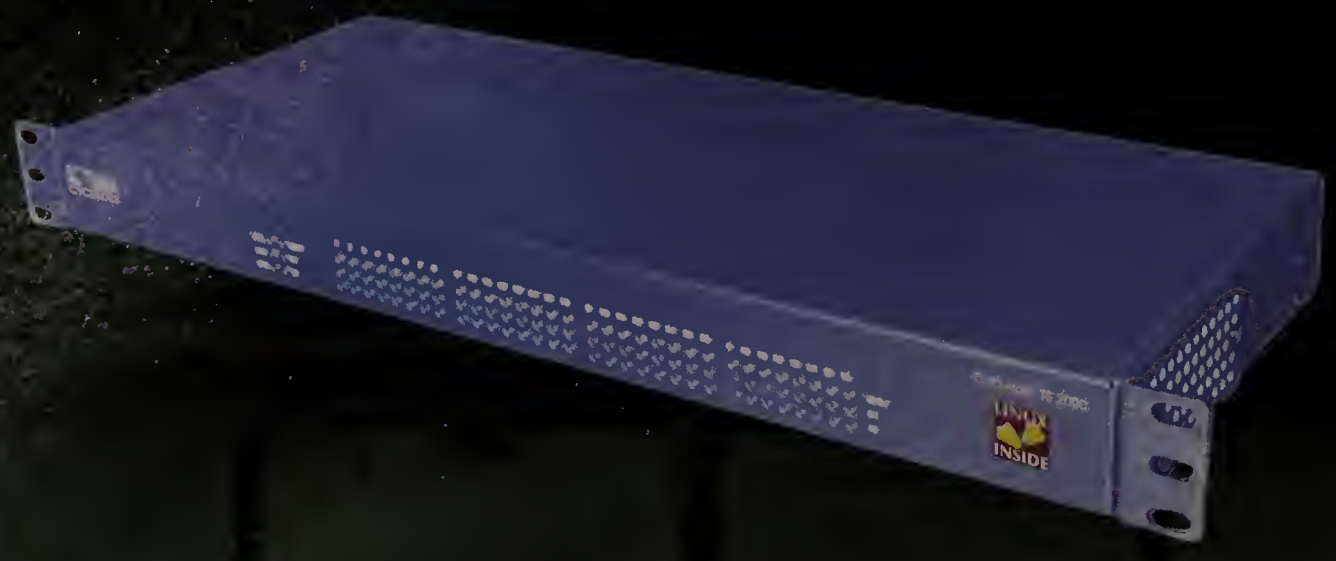
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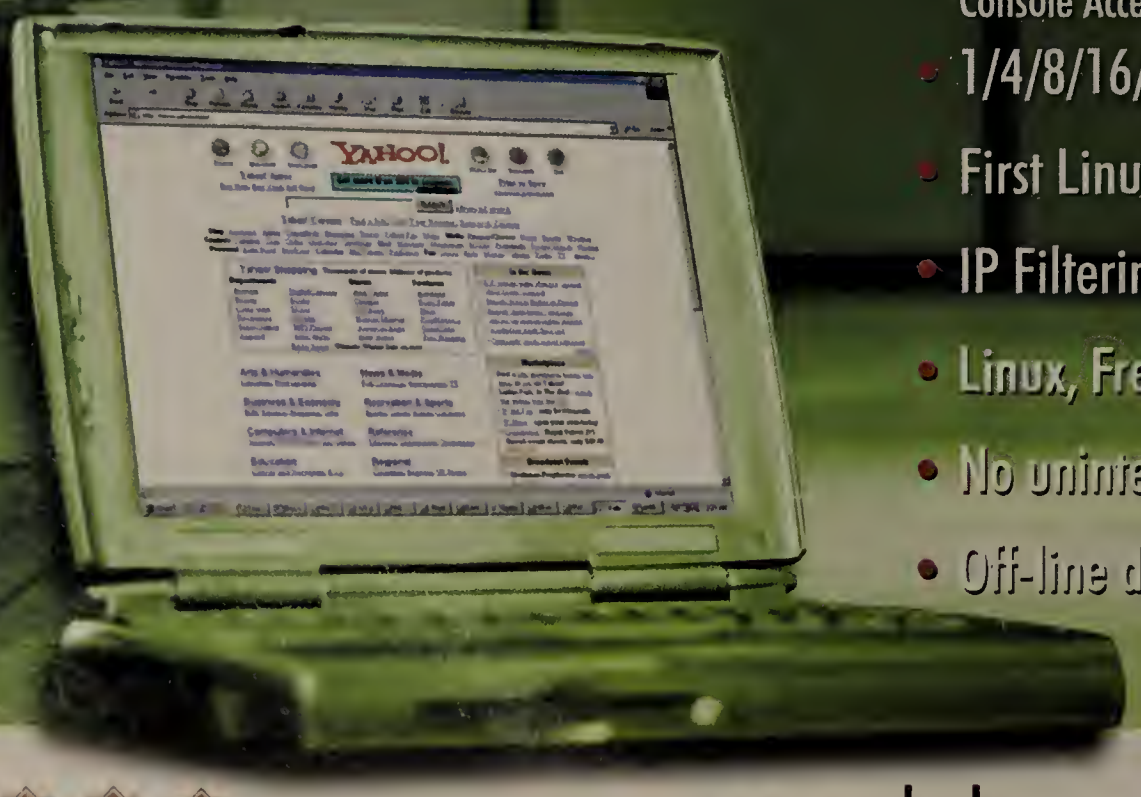
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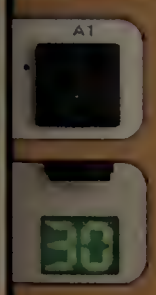
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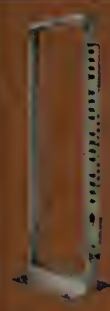
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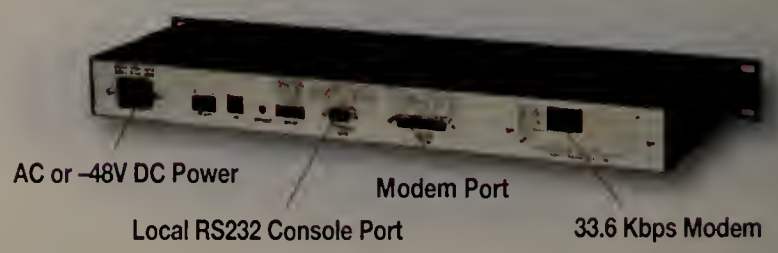
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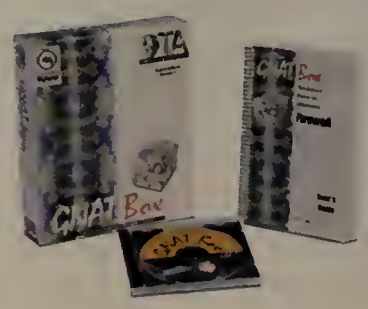


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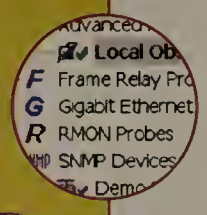
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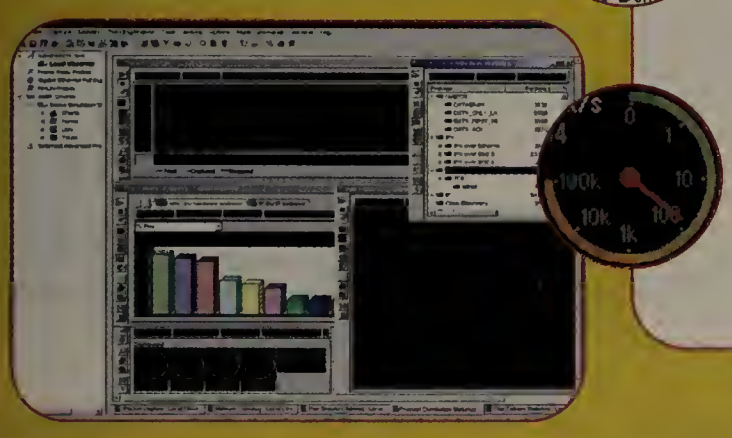
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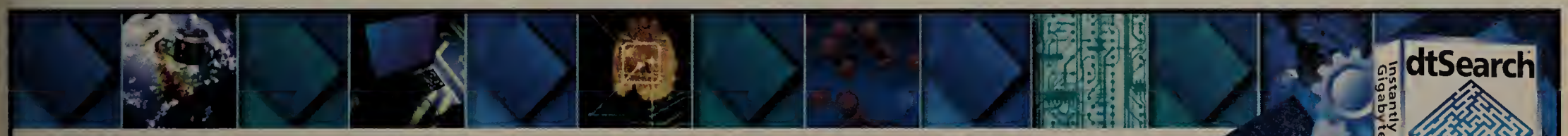
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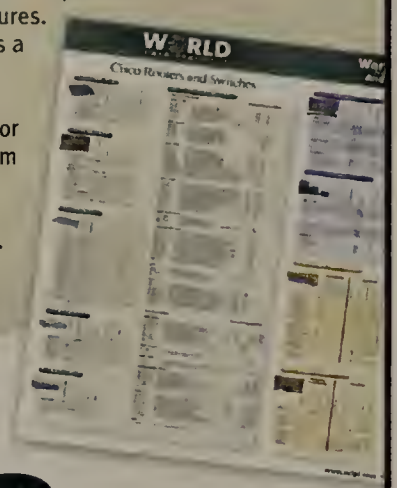
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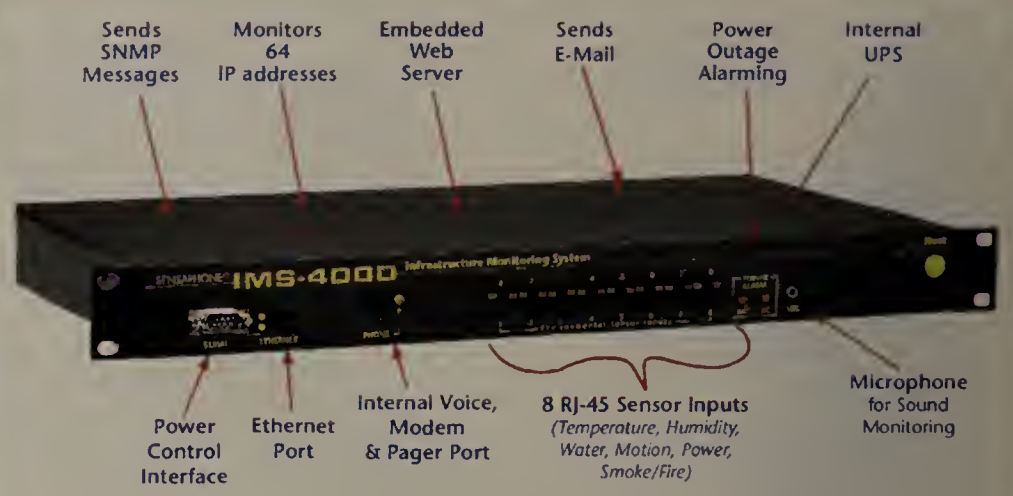


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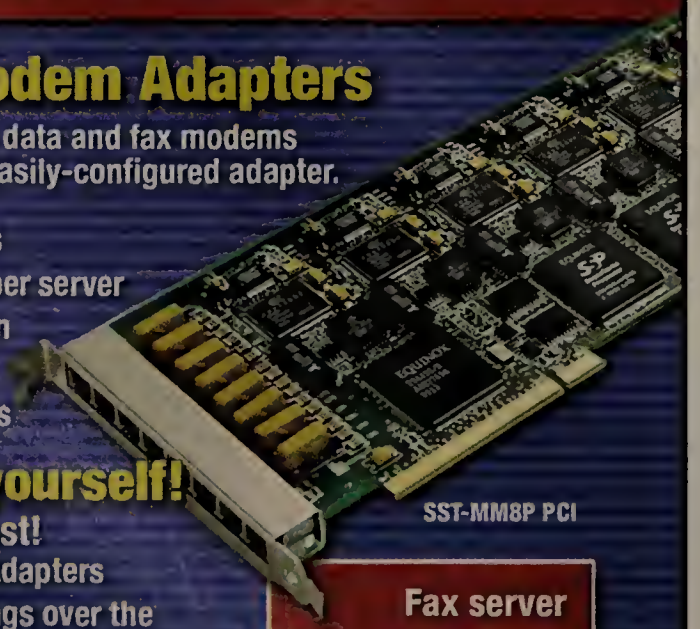
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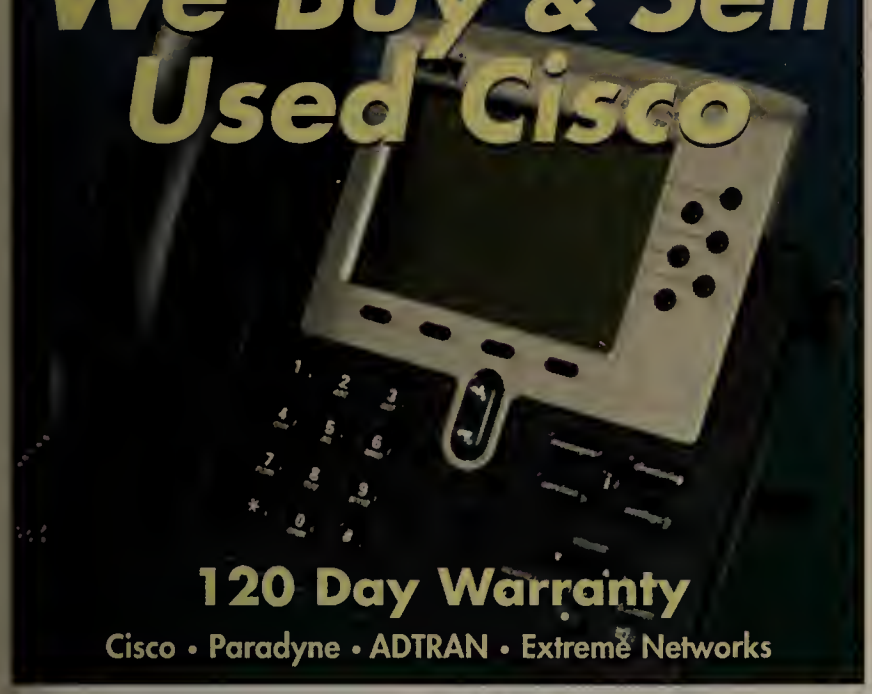
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Network World, 118 Turnpike Road, Southborough, MA 01772-9108, (508) 460-3333.

Periodicals postage paid at Southborough, Mass., and additional mailing offices. Posted under Canadian International Publication agreement #40063800. Network World (ISSN 0887-7661) is published weekly, except for a single combined issue for the last week in December and the first week in January by Network World, Inc., 118 Turnpike Road, Southborough, MA 01772-9108.

Network World is distributed free of charge in the U.S. to qualified management or professionals.

To apply for a free subscription, complete and sign the qualification card in this issue or write Network World at the address below. No subscriptions accepted without complete identification of subscriber's name, job function, company or organization. Based on the information supplied, the publisher reserves the right to reject non-qualified requests. Subscriptions: 1-508-490-6444

Nonqualified subscribers: $5.00 a copy; U.S - $129 a year (except Washington, DC, $136.74); Canada - $160.50 (including 7% GST. GST#126659952); Central & South America - $150 a year (surface mail); Europe - $205 a year (surface mail), all other countries - $300 a year (airmail service). Four weeks notice is required for change of address. Allow six weeks for new subscription service to begin. Please include mailing label from front cover of the publication.

Network World can be purchased on 35mm microfilm through University Microfilm Int., Periodical Entry Dept., 300 Zebb Road, Ann Arbor,Mich. 48106.

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BackSpin Mark Gibbs



The cons of the pros

I've been thinking about Internet scams. It should be globally known by now that there are legions of con men online who want to take your money by whatever means they can.

These crooks will offer you business "opportunities" and attempt to sell you drugs, software, you name it. And despite endless commentary and warnings from journalists, the FBI and the Federal Trade Commission (FTC), people still get taken.

As an example, consider the Nigerian Scam, otherwise known as 419 fraud. I first learned of this about five years ago when a friend got a letter by snail mail offering a "business proposition." Similar offers started appearing through e-mail a couple of years later and now I receive one or two each day!

<digression>If you don't know how the 419 scam works, let me tell you: You get an unsolicited offer along the lines of, "I have knowledge of a big pile of money but I need an accomplice to help me move it somewhere where I can get access to it and if you help me I'll pay you for your trouble."

The pitch appears to be a request to help launder illegally acquired money ("overbilled" contracts or some such) or reclaim funds captured by hostile governments. You are asked to provide a bank account and money for fees. Of course once they get your money the crooks vanish.

The messages are usually sent from or can be traced back to Nigeria, although some come from other nations such as Ghana, Togo, Liberia, Sierra Leone and the Ivory Coast.</digression>

The 419 scam is serious business! Estimates put the annual take in the hundreds of millions of dollars.

But we have companies much closer to home that, some would argue, have questionable ethics. Take VeriSign, otherwise known as Network Solutions. In the company's role as the primary Internet domain name registrar, it has considerable power that extends from control issues through to the marketing and sales of domain names and services. As such, it is pretty much guaranteed that the company will always be a target for criticism.

Some people are accusing VeriSign of conducting business in ways that are unacceptable. And these activities have been significant enough to attract the attention of the FTC.

According to Reuters: "The FTC is seeking information about the company's practices with regard to transferring Web addresses, deleting domain names and sending direct mail solicitations to customers of competitors in the marketing campaign that ended in May, the source said, and the company later confirmed."

VeriSign's business attitude is shown in its habit of sending final notices that claim a domain name renewal is overdue 45 days before the actual expiration date, and the custom of billing for a three-year renewal and not offering the one- and two-year prices.

VeriSign appears to be a company where chasing the sale has become perhaps too important. Check out NSI Horror Stories (www.nsihorrorstories.com) for an assortment of, well, horror stories.

Admittedly, some stories just show that the complainant wasn't really on the ball, hadn't read the VeriSign terms and conditions, or simply wasn't playing with a full deck. On the other hand, many stories sound credible and amount to serious allegations. And these stories have been cropping up for years.

What I'm wondering is, how long can this go on? Can we afford to have a public company in such a position of power? Even the government could run a less bureaucratic and more responsive operation. It certainly would be less inclined to questionable marketing and sales practices.

It is time to examine the concept of commercially run domain registries in general and VeriSign in particular. There are enough scams online as it is.

Pros and cons to backspin@gibbs.com.



'NetBuzz News, insights, opinions and oddities

By Paul McNamara

Spammers can't spell "cat"

New ideas — new weapons, if you will — are sorely needed if we are serious about eradicating spam before we're all too old to care.

Existing spam filters appear to be causing many legitimate e-mail senders and recipients more grief than does junk e-mail — witness the nightmarish tale from the online magazine TidBITS that we chronicled here two weeks ago. (*Network World* recently had its own brush with a spam filter run amok.)

Instituting effective antispam legislation nationwide would seem to be a long shot, because it will require the involvement of — heaven help us — our Washington politicians, and unwisely burden law enforcement officials who have stinkier fish to fry.

Which brings us to an antispam start-up called Vanquish, and its plan to battle e-mail evildoers by hitting them where it hurts: in the wallet.

"There are three things people expect from e-mail: It should be fast, free and uncensored," says Jeffrey Asher, the company's chief sales and marketing officer. "We wanted to not violate any of those principles and still solve the problem."

Whether they've succeeded remains to be seen — they're still in alpha tests — but the concept certainly warrants attention.

"The challenge with spam is that it costs the spammer between one and three ten-thousandths of a cent to send a spam," Asher says. "Therefore you don't have to create very much of an economic hurdle in order to stop spam."

Details of the Vanquish system are available at www.vanquish.com, but here's an example of how it will build a personal wall of protection against spam:

First you download the Vanquish Java applet that works with standard e-mail clients. During the installation process, you will be asked to designate who in your address book and e-mail archives should be allowed to send you future e-mail without having to pass through the Vanquish gauntlet. The default setting is everyone. These folks will never even know you're using the system.

Anyone else who wants to send you e-mail will have some hurdling to do.

The first leap involves unknown senders proving they are not a machine by passing a simple validation test. For example, upon the receipt of an e-mail from a party not previously approved, Vanquish may ship a small JPEG photo of a kitten to the would-be sender along with an explanation of Vanquish and the question: "What does this become when it grows up?" If the sender types "cat" in a reply, this hurdle is cleared and the e-mail is delivered.

It's a piece of cake for humans, but spam-generating applications will be stymied, meaning you won't see the spam, Asher says.

Doesn't that solve the problem, because most spam is of this ilk? Not permanently, because spammers are relatively bright and are likely to find a way around the validation screening. Moreover, Asher says, e-mail users will want to ensure that unknown persons or companies can send them legitimate e-mail.

Here's where the economic hurdle comes into play.

"If I don't know who you are and you're contacting me, then you have got to agree that for your e-mail to go through you are going to guarantee my satisfaction with that e-mail," he says. "That satisfaction guarantee is very low, say 5 to 10 cents."

In other words, if I decide your e-mail is spam, it will cost you a nickel or dime out of the "bond" account that you have established through Vanquish. Down the road, Vanquish users will be able to set the price higher. You say nobody's going to go through all that trouble to send e-mail to a stranger.

Spammers certainly won't.

Whether anyone else does may determine whether Vanquish thrives or vanishes.

No hurdles here. Fire at will. The address is buzz@nww.com.

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